

Psychology in Teaching

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THE PURPOSE of this book is to give the prospective teacher a chance to acquire training in educational psychology. Before he tries to solve actual classroom problems, he must become acquainted with the facts and principles of psychology and related fields that contribute most to an understanding of the child and the social forces in educational psychology—and, equally important, their *first* course the book tries to do is to help the teacher understand the nature and needs of the child rather than to lay a foundation for advanced courses in psychology.

In a very real sense, this book is an *introduction*. The human personality is too complex, and the child's day-by-day responses to his environment are too subtle and varied, for us to hope immediately for any final, absolute answers. As our knowledge of psychology advances, we shall come closer and closer to penetrating the depths of the human personality. But in our present state of knowledge, our desire for final answers must be tempered with humility.

Humility is especially appropriate to the student who is winning his way toward the status of the professional teacher. This student needs to do two things: First, he must acquire a knowledge of the facts on which effective teaching procedures are based. Second, he must develop an attitude that will enable him to apply his knowledge to actual situations with discretion and flexibility. Obviously, neither task can be completed within the few months spent in a

formal course in educational psychology. Our best teachers spend their entire professional lives adding to their knowledge and refining their teaching techniques. But this first course will set the stage and will give the prospective teacher an idea of what educational psychology can—and cannot—do to help him transform the classroom into an effective learning situation.

Just what is educational psychology? It is an application of data from psychology and related fields to educational problems. But it does more than draw on the data of psychology. It tests the findings and theories of the psychologist by applying psychological methods to the study of actual classroom situations. And, in so doing, it unearths new facts that can be used by the psychologist as well as by the teacher in advancing our understanding of the complex personality of the child.

It is not always easy for the student to see just how each new item of information is related to some situation that he will be meeting later on. So this book emphasizes the *interpretation* of data, and how they can be *applied* to specific classroom problems that professional teachers meet in their daily work with children.

There are many important psychological facts and concepts that are useful to the teacher. Not all of them, of course, can be brought together in an introductory book. The ones that are included here are those that seem to offer the most promise in helping the teacher to satisfy one or more of the following professional needs:

1. The professional teacher must know the facts of physical, emotional, social, and intellectual development in order to understand the nature of the child and the problems the child must meet in the ever-changing environment within which he develops. A knowledge of these facts helps the teacher to form reference points that enable him to recognize the extent and importance of the deviations from normality that each child exhibits.

2. The professional teacher must gain a mastery of the psychological data basic to an understanding of motivation, individual differences, and human learning, if he is to create the most effective learning situation for every child in the classroom.

3. The professional teacher must integrate the isolated facts of

human development, motivation, and learning into a broad and substantial framework of knowledge. We cannot at any educational level make specific preparation for each specific future problem. From an understanding of the general patterns of behavior comes the ability to meet the specific problems that arise from day to day.

4. The professional teacher must make a healthy adjustment to his own problems of living. The new teacher faces many problems as he wins his place as a member of the school staff and as a citizen of the community. A maladjusted and unhappy teacher is unlikely to contribute significantly to the development of well-adjusted and happy pupils.

In selecting the material for this book, the author has started with the problems that teachers are most likely to meet in the classroom and in the community. These are the problems that the prospective teacher must prepare to solve. And the content of a first course in educational psychology should be determined by the relative value of various areas of psychological knowledge in helping the teacher to solve them.

Various approaches have been used for identifying these problems. Field surveys of teachers' problems and studies of school administration and teaching methods have contributed valuable information. A survey of the problems that inexperienced teachers encounter in their first year of teaching has been particularly helpful. The author's conversations with experienced teachers in the classroom and in graduate classes, as well as his personal experience as a teacher in the public schools, have proved valuable guides.

Certain large subject-matter areas commonly included in texts on educational psychology have been omitted from this book, simply because they do not seem to give the teacher any direct help in meeting actual problems. For example, much of the scientific vocabulary of psychology seems unnecessary at this stage in the student's training. Niceties in the use of psychological terms are important to the psychologist but are of doubtful worth to the practicing teacher. Discussions of rival theories in which both sides of relatively unimportant questions are debated in detail appear likely to confuse rather than to enlighten the student. So they have been

omitted. A review of the historical development of various phases of psychological knowledge and a study of the men connected with these developments are interesting but are difficult to justify in terms of value to the teacher.

The book, then, emphasizes the fact that this first course in educational psychology is a service course in the teacher-preparation program. It is not a first course for the training of future educational psychologists.

A primary task of the educational psychologist is to interpret the results of psychological research and to suggest and demonstrate how these results can be applied to educational practice. Such a task is more difficult than merely reporting research findings and then leaving the student to draw his own conclusions. But the beginning student must be able to rely on his instructor and the writer of his textbook for the high degree of training in both education and psychology that the interpretation of research findings requires. The student simply does not have the time to search out the weaknesses and strengths of experimental methodology.

However, research findings sometimes help the student to see the basis for interpretations. And research studies often furnish vivid illustrations of how psychological data can be applied to child behavior. The numerous studies reported in this book are intended to serve these two purposes. They are used to illustrate—not to prove—a point.

In an introductory course, earlier studies that attack major problems often are more valuable than later ones that elaborate general principles or that examine isolated facets of broad areas. This is particularly true when we study physiological, intellectual, and emotional development, and the learning process itself. Thus studies by Ebbinghaus and Gates provide some of our best illustrations of the learning process, and studies by Watson and Sberman best illustrate some of our basic knowledge of emotional development. This does not, of course, mean that psychological knowledge has been static in recent years, or that we need not consider recent discoveries.

For students who wish to do further reading, two separate annotated bibliographies have been provided for each chapter. The

"Suggested Readings" are built around five source books that are available in most libraries. Pertinent chapters or portions of chapters are suggested for students who want a broader discussion of theory and more factual information than can be presented here. The second bibliography, "Additional Resources," consists of selections from journals, yearbooks, textbooks, and other resources. These are for students who want to pursue areas of special interest.

The book is divided into three parts: *Part One: Facts and Trends of Growth and Development from Infancy to Maturity*, *Part Two: How and Why People Learn*, *Part Three: Motives and Problems in the Life of the Individual*.

Chapter 1, "The Professional Needs of the Teacher," serves as an introduction and precedes Part One. The student can gain little practical benefit from a study of educational psychology until he is aware of some of the specific problems that he will encounter when he becomes a teacher. Since the typical student is not aware of the problems of the teacher, he feels no need to prepare to solve them. Many of the data of educational psychology are fascinating in themselves and will serve to hold the interest of the student. But he cannot be expected to apply these data to problems that he will encounter in the future unless applications are suggested to him at the time he studies the material. However, an opening chapter that identifies the professional needs of the teacher is not sufficient to maintain a felt need throughout an entire course. For this reason, the opening paragraphs of each chapter preview the specific problems to which the material that follows can be applied. In addition, many of the chapters close with suggestions on what the teacher, or the school as a whole, can do to help the child meet the problems of learning and adjustment in the particular areas discussed in the chapter.

Since individual differences in rate and level of development give rise to many of the toughest problems of education, much of this book is devoted to their recognition and to the adjustments that must be made to them. Individual differences are of such basic importance that they cannot be treated apart from the settings in which they occur. Thus, although one chapter is devoted exclusively

to individual differences in ability to learn, every chapter (particularly those that deal with motivation, learning, intelligence, reading, personality, and the specific aspects of the physical, emotional, social, and attitudinal development of the individual) gives much space to this topic.

In attempting to meet those professional needs of the teacher that can be satisfied through a study of educational psychology, this book has three major goals:

1. To *select* those data that are most relevant to the solution of the professional teacher's problems.
2. To *interpret* these data in terms of the problems of teacher and pupil.
3. To *apply* the interpretations to the specific problems that the professional teacher will meet.

Although this book bears the name of but one author, many persons have contributed ideas, inspiration, and hard work. Especially great is my debt to Professor James B. Stroud for his inspiration, instruction, and close friendship first at Emporia State Teachers College and later at the State University of Iowa. My wife, Zona B. Smith, has contributed a great deal through her critical readings of the manuscript. Many of the concrete applications suggested in the book had their origin in her experiences as teacher and mother. Finally, credit for stimulation and ideas must go to my fellow teachers in the elementary and secondary schools of Kansas, and to my students and colleagues at Arizona State Teachers College, Syracuse University, and The University of Kansas.

The photographs used in the endpapers are from two sources: Young America Films, Inc., and my son, George L. Smith.

H.P.S.

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The professional needs of the teacher

EVERY PROFESSIONAL MAN AND WOMAN must possess certain information, techniques, and skills basic to the practice of his profession. Many professions require special physical, emotional, social, and intellectual traits. In addition, the members of a profession must have had certain common experiences in preparing to practice their vocation. Obviously, the members of each profession and trade are different in certain respects from non-members. They may be different in personality, interests, and aptitudes, and certainly they will have attained special knowledge and skill as a result of their training and experiences.

If we can identify the characteristics and skills that distinguish the professional teacher, we should be able to plan the experiences that will be most rewarding for you in your preparation for teaching. What are these basic skills and characteristics that must be yours before you become a professional teacher?

First, the professional teacher must have a basic knowledge of the culture of his society and must have attained considerable maturity in his habits of work and philosophy of life. Every teacher should possess the general information and skills and should attain the level of maturity of attitudes, habits of study, and philosophy of life that we expect of all competent graduates from a general college program of science, art, literature, philosophy, psychology, citizenship, and history. But cultural awareness and mature attitudes are only prerequisites in the professional development of the teacher. They are only two of the tools he must master.

Status as a professional person—physician, teacher, or dentist—is not acquired simply because one possesses the tools of the profession. Such status must await the acquisition of *skill in the use of these tools* in bringing about changes in the material with which one works. The physician uses his tools to bring about physiological changes in his patient; the teacher strives to produce changes in the behavior of his pupils.

Although it is true that one may not *teach* until one has *learned*, and that *learning* is a necessary step in preparing for *teaching*, *learning* is far from a sufficient or final step.

The primary task of the teacher is to aid boys and girls to become aware of their cultural heritage and to help them develop desirable habits, attitudes, interests, and personality and character patterns. His professional distinction lies in his knowledge of boys and girls rather than in his knowledge of specific subject matter.

We can divide the teacher's professional skill and knowledge into four broad areas. In each area he must attain a high degree of competence:

1. The teacher must know the children with whom he is to work. He must acquire a thorough knowledge of the nature and needs of boys and girls. He must know the factors that govern their growth in attitudes, interests, personality, intellectual ability, and physical size. He must understand how and why they learn and the forces that he can use to guide their learning.

2. The teacher must have skill in diagnosis. He must be able to determine the stage of each child's development in each of many areas: abilities, interests, and personality, as well as educational achievement.

3. The teacher must possess a broad understanding of the goals of education. He must have a clear conception of the end toward which he is working. Children don't just grow. Their direction of development depends upon their experiences. This does not mean that the teacher will try to mold each boy and girl to the same pattern. Education for a democracy is much more complex and demanding! But he must be able to set goals that will stimulate each child to make maximum use of his capabilities.

At the same time, the teacher must not set goals so high that they threaten the security and self-esteem of the child and prevent him from exercising in full his potentialities for good adjustment, happy living, and responsible citizenship.

4. *The teacher must know the most effective methods for helping each child achieve maximum growth.* He must know how to attain changes in children's achievement, personality, attitudes, interests, and emotional development. He must be able to vary his methods to suit the individual needs and abilities of each child. He must work with the child in a social environment affected by other children, by the parents, and by the teacher himself. He must use the forces inherent in the social setting to create effective situations for classroom learning and for the development of the total personality of each child.

As we compare the work of the teacher and the physician, we see that both must possess the tools with which changes are wrought in the human beings with whom they work. For the physician, the tools will be drugs and instruments; for the teacher, they will be a broad cultural background and deep, specific subject-matter preparation. In addition to these tools, both find it necessary to possess sound professional skill and knowledge, including techniques of diagnosis and a knowledge of the goals toward which they are striving as they induce changes. They must have a thorough knowledge of the human material itself, and skill in the best methods for employing their tools.

Psychology offers a wealth of facts and principles that help the teacher to meet his professional needs. However, these facts and principles are of little value until the teacher understands specifically how they can be applied in realistic situations.

Until you yourself enter the classroom as a professional teacher, you will not have met many of the professional problems that you must learn to solve.¹ Thus you may find it difficult to recognize a professional problem when you meet one in your teacher-preparation courses. For this reason, these courses must emphasize the

¹ Frank Slobetz, "How Elementary-School Teachers Meet Selected School Situations," *Journal of Educational Psychology*, XLIV (1951), pp. 339-356.

TABLE 1 *Ranking of major problems according to educational levels**

Type of Problem	Educational Level			
	Elementary school	Junior high school	Senior high school	All levels combined
Motivation	1	1	1	1
Testing and evaluating	3	2	2	2
Diagnosing and correcting difficulties	2	4	4	3
Modes of presentation	5	3	3	4
Individual differences	4	5	5	5
How to study	0	6	7	6
Transfer of training	11	8	6	7
Relationships with administration	0	10	6	8
Lack of materials and equipment	10	12.5	8	9
Curricular and extra-curricular activities	8	11	12	10
Thoroughness and mastery	7	12.5	13.5	11
Discipline	14	7	10	12
Pupil participation in class	13	6	11	13
Guidance	15	14	13.5	14
Racial differences	12	15	16	15
Parent-teacher relationships	16	16	15	16

* Robert A. Davis, "The Teaching Problems of 1075 Public School Teachers," *Journal of Experimental Education*, IX (1910), p. 45.

future application of the materials and skills that you learn. One way to acquaint you with professional problems, and at the same time to help you see a need for preparing to solve them, is to study some of the problems that teachers report as troublesome or that supervisors report as having been major factors in teacher failure.

In a study of the specific teaching difficulties encountered by 1,075 public-school teachers in Colorado, the most frequently reported problem was an inability to motivate the child. Table 1 lists the problems reported by these teachers as most important. Notice that lack of sufficient subject-matter knowledge was not listed at all. Most of the problems appear to arise because of an inadequate understanding of the nature of the child, an inability to diagnose his difficulties, and a lack of skill in creating a situation in which he has a felt need to learn.

There have been many studies of the problems that teachers encounter. One author has summarized the results of 31 such studies. In all, many thousands of teachers—experienced and inexperienced, rural and urban—reported their most pressing problems. Table 2 gives us a summary of these findings.

We find here the same trend that we found in the other study. When teachers encounter difficulties, it is usually in knowing how to teach John, Mary, Frank, or Susan, rather than in knowing enough algebra, English, history, or spelling.

Another study concerns the problems encountered during their first year of teaching by 87 graduates of a university program in teacher preparation. This study gives us information on the reactions of new teachers to various phases of their school and community life. After one month of high-school teaching, each graduate was asked to rate 38 possible problems according to seriousness. The procedure was repeated at the end of one year of teaching. The 12 problems felt to be most serious, and their rank among the 38 problems after one month and after one year of teaching, are given in Table 3.

Notice that the same 12 problems that were rated most serious after one month remained most serious after one year, although within the list of 12 there was considerable change in relative rank.

TABLE 2 A summary of the results of thirty-one studies of teachers' problems*

Number of Studies in
Which This Difficulty
Was One of the First
Six in Importance

Difficulty	19
1. Difficulties in providing for individual differences among pupils	18
2. Difficulties in teaching method	17
3. Difficulties of discipline, control, social development of the pupil	12
4. Difficulties of motivation, getting children interested, getting them to work	9
5. Difficulties in the direction of study	8
6. Difficulties in organizing and administering the classroom	6
7. Difficulties in selecting appropriate subject matter	6
8. Lack of time during the school day for all the things that need to be done	6
9. Difficulties in organization of materials	5
10. Difficulties in planning and making assignments	5
11. Difficulties in grading and promotion of pupils	4
12. Inadequacy of supplies and materials	4
13. Difficulties in testing and evaluating	4
14. Personal difficulties of the teacher	3
15. Difficulties arising from conditions of work	3
16. Difficulties involved in diagnosing and correcting particular pupil difficulties	3
17. Difficulties in teaching reading	3
18. Difficulties in making plans for teaching	2
19. Difficulties in promoting desirable habits	2
20. Difficulties in securing study aids	2
21. Difficulty in securing pupil participation	2
22. Difficulty because pupils talk while others are reciting	2
23. Outside interruptions of class work	2
24. Miscellaneous problems mentioned in only one study	40

* Adapted from George E. Hill, "Teachers' Instructional Difficulties—A Review of Research," *Journal of Educational Research*, XXXVII (1914), p. 608.

TABLE 3 *Personal and professional problems rated as most serious during the first teaching year**

Problem	Rank Among 38 Problems	
	After one month	After one year
My students seem to lack initiative in doing work.	1	1
Many of my students do not seem to be interested in learning.	2	2
The community is lacking in the type of recreational facilities which I would like.	3	4
My salary is inadequate for me to enjoy all the necessities of life and the luxuries which I need in order to be happy.	4	5
The social life of the community that is open to teachers is inadequate.	5	3
There is too little opportunity to meet acceptable members of the opposite sex.	6	10.5
The keeping of good discipline seems to be particularly difficult.	7	9
I do not feel adequately prepared in the subjects I am teaching.	8	7
My students seem quite rough and unpolished.	9	12
Some of my students do not bathe frequently and many wear dirty clothes.	10	8
The students I am teaching are far less intelligent than they should be.	11	8
The library facilities are inadequate.	12	10.5

* Henry P. Smith, "A Study of the Problems of Beginning Teachers," *Educational Administration and Supervision*, XXXVI (1950), pp. 258-260.

But studies of the problems as seen through the eyes of the teacher may give us an inadequate view of the needs of the professional teacher. Problems that are tremendously important to the child's welfare may be missed, particularly by the new teacher. Let us see what school supervisors think are the most common problems of the teacher. In Table 4, we see again that it is a lack of professional skill and knowledge rather than inadequate subject-matter learning that interferes most with the satisfactory performance of the teacher's task.

In another study, 35 supervisors of elementary teachers in the rural schools of California were asked to identify the type of help

TABLE 4 *The ten problems of beginning Ohio teachers most frequently reported by their administrators and supervisors**

Types of Problems	Number of Teachers Believed To Have This Problem	
	of 60 men teachers	of 143 women teachers
Discipline	29	68
Teaching of Classes	12	19
Professional Relations	10	17
Personal Habits	8	19
Teacher-Administrator Cooperation	11	12
Meeting Individual Differences	5	13
Attitude Toward Pupils	9	8
Routine Procedures	6	11
Assignments	8	8
Treatment of parents	4	11

* Adapted from W. R. Flesher, "The Beginning Teacher," *Educational Research Bulletin*, XXIV (1945), p. 17.

most needed by their teachers. This resulted in the following listing:²

I. *Individual Differences*

- How to adapt seatwork to pupils of different ability.
- How to supplement pupil's lack of out-of-school training.
- How to deal with subnormal, retarded, and slow children.
- How to teach immature children.
- How to provide for individual differences.
- How to supplement for lack of pupil's previous school training.
- How to discover and diagnose pupil's needs, abilities, and achievements.

II. *Classroom Performance*

- How to develop vocabulary for reading in meaningful situations rather than in isolation.
- How to adapt seatwork to pupils of differing ability.
- How to teach pupils better study habits.
- How to build the child's experiences needed in reading.

² Deta P. Neeley, "Major Problems Confronting Rural Teachers," *Educational Method*, XX (1941), pp. 200-201.

How to break down subject matter divisions in carrying out activities.

How to use classroom activities as a means of motivating, enriching, and reenforcing drill.

How to prepare the child for reading.

III. *Planning*

How to use stories, pictures, dramatization, booklets, and informal conversation lessons.

How to plan and set up worth-while objectives.

How to use a wide range of types of materials in reading.

How to use science materials in the satisfaction of interests.

How to provide many first-hand constructive experiences.

IV. *Reading*

How to provide meaningful seatwork.

How to develop vocabularies for reading in meaningful situations rather than in isolation.

How to build the child's experiences needed in reading.

How to prepare the child for reading.

These listings of the problems of teachers have important points in common: Many teachers encounter difficulty in understanding the child, in appraising his attainments and abilities, and in planning an effective learning situation. Even problems of discipline ordinarily arise only because the teacher fails to understand the child and thus is unable to plan an effective learning situation.

We must not draw unjustified conclusions from these studies. In none of them is there any suggestion that a teacher need not possess the basic subject-matter tools. It appears, however, that both the supervisor and the teacher find deficiencies in professional skill of most immediate concern. The reason may be that children and parents react much more quickly when a teacher reveals a deficiency in professional skill than when he shows a lack of scholastic tools. The teacher who is incompetent in history, English, or mathematics does not offer the same sort of threat to the child, the parent, or the supervisor as the teacher who is unable to motivate, to organize, and in discipline.

Although a study of teaching problems as seen by the teacher

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himself or by his supervisor is valuable, we should also understand the attitudes of the pupils in the classroom toward these problems. In one survey, approximately 12,000 letters were received from children and adolescents describing "the teacher who helped me most." The results of an analysis of these letters are shown in Table 5. We can see that pupils tend to appraise a teacher on the

TABLE 5 *The 12 traits mentioned most frequently in 12,000 letters describing the "teacher who helped me most" **

1. Cooperative, democratic attitude
2. Kindliness and consideration for the individual
3. Patience
4. Wide interests
5. Personal appearance and pleasing manner
6. Fairness and impartiality
7. Sense of humor
8. Good disposition and consistent behavior
9. Interest in pupil's problems
10. Flexibility
11. Use of recognition and praise
12. Unusual proficiency in teaching a particular subject

* Adapted from Paul Witty, "An Analysis of the Personality Traits of the Effective Teacher," *Journal of Educational Research*, XL (1947), p. 663. Traits are arranged in the order of their frequency of mention. 4,000 letters were from children under 9 years of age, 4,000 from children ages 9-14, and 4,000 from children over 14 years of age.

basis of whether his personality threatens or bolsters their security and self-esteem. The characteristics of the teacher that determine the social and emotional climate of the classroom are those that are most important in determining the child's own sense of well-being. Thus they determine the degree to which a teacher will be accepted or rejected by his students. Although good teaching must go far beyond the creation of a warm social acceptance by the pupil, such an acceptance is essential if the teacher is to create a highly effective learning situation.³

It is interesting to compare these descriptions of a favorite

³ Walter D. Smith, "Social Attraction Patterns between Elementary-school Children and Student-teachers: Sociometric Analysis," *Journal of Educational Psychology*, XLIV (1953), pp. 113-125.

- pp. 139-151. (An analysis of reports of graduate students looking backward to their elementary and high-school days and of statements by elementary and high-school students concerning their teachers.)
- Kyte, George C., "Problems Which Confront Beginning Rural School Teachers," *Educational Method*, XV (1936), pp. 227-235. (An analysis of the problems of elementary teachers in rural schools at the end of their first half-year of teaching.)
- Moore, Eoline Wallace, "Teaching Difficulties of White and Negro Teachers," *Elementary School Journal*, XXXVI (1935), pp. 127-128. (A comparison of the teaching difficulties of 100 white and 100 Negro teachers in a southern city.)
- Seagoe, May V., "Prediction of In-Service Success in Teaching," *Journal of Educational Research*, XXXIX (1946), pp. 658-663. (An attempt to see what, if any, measures of ability and personality would predict success as a teacher.)
- Snygg, Donald, and Arthur W. Combs, *Individual Behavior*. New York: Harper and Brothers, 1949. Chapter 10, "The Goals of Education," pp. 204-225, and Chapter 11, "The Task of the Teacher," pp. 226-244. (Serves as a valuable introduction to educational psychology.)
- Stroud, J. B., "Educational Psychology," *Annual Review of Psychology*, Vol. II (1951), pp. 281-304. (A critical review of the current status of knowledge and a suggestion of possible trends in the application of psychology to educational problems.)
- Uggen, Julia, "A Composite Study of Difficulties of Rural Teachers," *Educational Administration and Supervision*, XXIV (1938), pp. 195-204. (A summary of 15 studies of the problems of teachers in rural schools.)
- Witty, Paul A., "Evaluation of Studies of the Characteristics of the Effective Teacher," *Improving Educational Research*, Official Report, American Educational Research Association, 1948, pp. 198-204. (A report of a number of attempts to find what teacher characteristics children considered to be most important.)

Note: The "Additional resources" listing that follows each chapter is intended for use by the instructor who may wish to assign wider reading than is provided in the Suggested Reading list. The additional resources will be useful in adapting the text to the needs of a graduate class and in offering students an opportunity to do additional reading on a topic of particular interest. In addition to the references listed here, many of the footnoted references are well worth reading in their original source.

PART ONE *Facts and trends of growth and development from infancy to maturity*

- CHAPTER 2** *Physical growth and health*
CHAPTER 3 *Emotional growth and development*
CHAPTER 4 *Social growth and adjustment*
CHAPTER 5 *The development of attitudes, ideals, and beliefs*
CHAPTER 6 *The nature and development of intelligence*

Physical growth and health

A healthy body is of primary importance throughout the life of the individual. Problems caused by deviations in physical growth are responsible for many a "problem child." The adjustment of a child, in all areas, is directly related to his physical development, since physical development is an important determinant of his status among his peers and of his responses to them. High mental ability and outstanding scholastic achievement are of little worth either to the child or to the society if his physical health is impaired.

The facts of physical growth, though interesting in their own right, are of primary concern to teachers because of the emotional, social, and intellectual problems that are likely to accompany deviations from physical normality. A child's rate of growth and his level of maturation may have a substantial effect upon his social status and acceptance, upon his choice of activities and the extent of his participation in them, and upon his emotional health. Deviations from normality in physical development may block or guarantee success in achieving what he regards as important.

Physical growth and the concept of self. The very name by which a child is known to his peers ("Beaupole," "Skinny," "Shorty," "Fatso") is likely to be the direct outgrowth of a physical deviation from normality. Physical size, strength, and agility are of tremendous importance to the male during both childhood and adolescence, the periods when the broad outline of personality is formed. Although for the female gross physical strength may be of minor

importance, normality of size, skin, and teeth is of great significance.

People react differently to the thin and the fat, the big and the little, the whole and the crippled, the energetic and the languid, the strong and the weak, the handsome and the ugly. Because our reaction to others is determined in part by their reaction to us, it follows that our own physical status will determine in part our acceptance or rejection of others.¹ Personality and interests—our very life patterns—are determined by our need for the approval of others and our efforts to attain that approval.

One's body and one's physical appearance, including grooming and clothing, become a symbol of one's self. We feel worthy and we are accepted by others as worthy, to a large extent, as we appear worthy. Size, health, and posture are strong determinants of acceptance and worth. The adult who grows fat and bald and who loses his vitality and good looks has a problem similar to that of the adolescent who has not yet attained what he considers a pleasing physical appearance. But the life experiences of the adult have made him better able to accept his physical deficiencies, and the world of his peers places less value on physical excellence than does the peer world of the adolescent.

Each person, at least for a time, attempts to modify himself so that he will be well regarded by others; but, finally, he must arrive at an acceptance of himself, recognizing that he has certain limitations but still preserving a feeling of worth and of self-esteem.

Physical size and one's conception of the world. As a part of the adjustment necessary to attain self-acceptance, each person shows a tendency to use himself and his attainments as a standard for evaluating others. The tall man or child seldom considers another person tall unless that person is taller than himself. To some extent, the same holds true for the factors of strength, weight, age, intelligence, energy, moral standards, and even attractiveness.

Thus, both the reactions of others to us and our own appraisals

¹ Mary C. Jones and Nancy Bayley, "Physical Maturing Among Boys as Related to Behavior," *Journal of Educational Psychology*, XLI (1950), pp. 129-148.

of others are determined to a considerable extent by our physical appearance. Consequently, our physical appearance plays a double role in determining the frustrations and successes we are likely to encounter. Even the appearance of inanimate objects in the world about us is colored by our own size in relation to them. Pencils are made for hands of average size, chairs and beds are made for persons of average height, and books are printed for children with average vision.

This does not mean that we can predict the specific personality traits of an individual through a knowledge of his physical appearance alone. The process of developing modes of adjustment is far too complex for anything so simple. The important conclusion that we can draw from a study of the influence of physical deviations is that any child who is extremely fat, thin, tall, short, weak, strong, ugly, or who, by reason of physical deformity, is different from his fellows, must solve problems of adjustment growing out of these deviations in addition to those he would face were he average in these respects. He may develop into either a weaker or a stronger individual as a result. Any important problem encountered by the individual changes him in at least two ways. He must change in order to live with his problem—either by conquering it, accepting it, or ignoring it. And he is changed because of his *experience* in adjusting to the problem. Every problem the child faces and solves is a learning experience. We can judge the experience to be good or bad only if we know the extent to which it helps or hinders the child in solving future problems. The mode of attack that leads to the solution of one problem is likely to be tried again when similar problems arise in the future.

Problems and personality development. Men become great by conquering great problems; men become maladjusted by failing to conquer problems. Meeting a problem may make an individual far more adept at meeting future problems than he would have been had the present problem never arisen. The critical aspect of any learning situation is not the nature of the problem itself, but the nature of the approach that is found effective in dealing with the problem. The effect of important problems in the development

of the personality may be compared with the effect of fire on inanimate materials. They may either temper or destroy.

It is important for you as a teacher to recognize the major problems that each child is likely to encounter. Your function is not to solve problems for the child, nor is it to protect him from them. It is to guarantee that the child will finally reach a solution satisfactory both to the child and to society. Only to the extent that you are able to recognize and evaluate the problems of the child can you guide him toward desirable solutions. Help at a critical point may be extremely important in keeping the child from being driven to retreat to a dream world or from being tempted to adjust through aggressive delinquency. At times you may find it possible to reduce the number or size of his problems. At other times you will guide him to a constructive attack on them.

Why you are concerned with physical growth

AS A TEACHER, you must have concrete reference points for the average development of children at various age levels. You must develop sound ideas on what is average or *normal* physical, emotional, social, and intellectual development for every age level and for both sexes. Only thus can you determine the extent and seriousness of deviations and predict the specific problems that any given child is likely to meet. As you strive to understand one particular child, you will not be primarily interested in these reference points themselves; rather, you will be concerned with the direction and the extent to which the child varies from them. The problem of individual variations from normal development or, as it usually is stated, the problem of *individual difference*, dominates the whole of educational psychology. Certainly to be normal or average may not be our goal, but any substantial deviation from normal, even though it is in the direction of *superiority*, brings problems different from those encountered by one who is average in a particular trait.

The child attains many rewards from growing older, such as increased personal freedom and the admiration of younger children. But he also encounters a number of disadvantages, some of which he may be unwilling to accept. He finds that he must begin to assume responsibilities for self-support, he is called upon to help with the work of maintaining the home, he finds that school demands more of his time, he discovers that he must make an adjustment to the problem of sex, and he learns that the penalties that he must pay for his mistakes become greater and of longer duration. Changing voice, skin blemishes, masturbation, physical size in relation to his fellows, and standards of acceptable dress may create real problems.

Physiological development creates two types of problems for the child: behavior suitable to one body size becomes inadequate as the boy grows and matures; and behavioral adjustments that might be accomplished easily if the child had only himself to consider are greatly complicated by the necessity for adjusting to the varying levels of maturation of his associates.

There would be differences in the physical development of children in the same school grade even if all children grew at the same rate. The age differences alone would result in wide variations in size. But all children do not grow at the same rate. There are tremendous differences in the size and maturity of children of the same age, particularly during the early teens, and there are important differences in size and maturity level that are related to sex. Thus the differences in age and the presence of members of both sexes in any one school grade, plus important differences in rate of growth between individuals of the same age and sex, combine to make physical development an important educational problem. We find in any one grade, at least from seventh to twelfth, the sexually mature and the immature.

Growth in height and weight

Differences in size between children of the same age, and some of the differences between sexes in rate of growth, become ap-

parent as we examine Fig. 1, which gives us a picture of the wide variations in physical size among children of the same age.

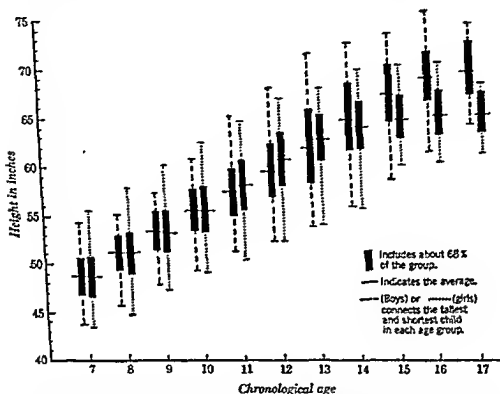


FIG. 1. Comparison of male and female standing heights, ages 7 to 17, showing individual differences in development between sexes and among children of the same sex. Adapted from Katherine Simmons, "The Brush Foundation Study of Child Growth and Development, II, Physical Growth and Development," Monographs of the Society for Research in Child Development, Vol. IX, No. 1 (1944), p. 17.

Note that some members of each sex are as tall at age 11 as are other members of their sex at age 17. Notice also that, even though the average girl of 12 is taller than the average boy of 12, some boys of 10 are as tall as the average girl of 12. Data of this kind show us why we must consider each child as an individual with individual capacities and problems. Later on, we shall find that the same problem of individual differences exists in social, emotional, attitudinal, and intellectual development.

Although a study of growth in height and weight can hardly give us a complete picture of the growth process, there are many

reasons why it is worth our while to examine these two aspects of growth. As we know, the physical size of an individual determines to some extent his acceptance by his peers. In addition, physical appearance, particularly size, is likely to become the "symbol of

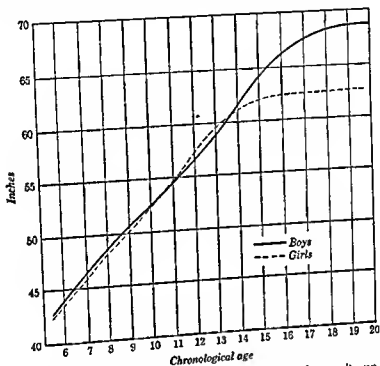


FIG. 2. Average height of boys and girls. From Shuttleworth, *op. cit.*, pp. 248-249.

the self."² A no less important reason for our study of typical patterns of physical growth is that some internal changes, particularly the achievement of sexual maturity, are found to be closely associated with the rate of increase in height and weight.³

Differences between boys and girls in rate of physical growth

² Caroline B. Zachry, *Emotion and Conduct in Adolescence*. New York: Appleton-Century-Crofts, Inc., 1940, p. 32.
³ F. K. Shuttleworth, "The Physical and Mental Growth of Girls and Boys Age Six to Nineteen in Relation to Age at Maximum Growth," *Monographs of the Society for Research in Child Development*, Vol. IV, No. 3 (1939), pp. 1-3.

are shown in Figs. 2 and 3. The most rapid increase in height is made by boys between ages six and nine and between 13 and 16. The girls make their greatest growth in height between ages 11 and 14; during the years 11 to 13½ they are taller on the average than

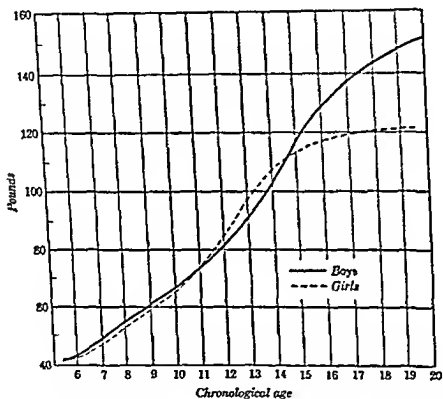


FIG. 3. Average weight of boys and girls. From Shuttleworth, *op. cit.*, pp. 248-249.

boys of the same age. A somewhat similar situation exists in increase in weight. Boys increase rapidly from ages 13 to 16, while girls begin the same trend approximately two years sooner and have reached a slower rate of growth by age 13½. The result is that from ages 11 to 14½ the average girl is heavier than the average boy of the same age.⁴

These sex differences cause many problems that may lead to emotional and social maladjustment. The typical girl, finding her-

⁴ Shuttleworth, *op. cit.*, pp. 248-249.

self shooting upward (and outward) in comparison with the typical boy of her age, may develop a feeling of self-consciousness. She may come to dislike dances and parties where her size contrasts sharply with that of boys of her age. Her ideals of graceful social dancing are gained at least in part from watching motion-picture and television shows of adults at play. Her feeling of self-esteem is rudely challenged when she finds that *her* partner must look around her side rather than over her shoulder as they dance. The same type of problem exists for the boy, who is unhappy about his inferior size. The resultant dislike for dances may grow into a serious dislike for and fear of any social situation. The feeling of inferiority resulting from unfortunate social experiences may explain in part the preferences of men for small women and of women for tall men. It certainly contributes to the tendency of girls to choose social contacts with boys two or three years older than themselves and of boys to prefer younger girls.

In the case of both boys and girls, puberty ordinarily occurs shortly after the individual growth period marked by the largest increase in height.⁵ Thus, this stage of most rapid growth, or the "pre-pubescent growth spurt," as it is sometimes called, is important to us as teachers. It tells us that a child is attaining physiological maturity, and it alerts us to the possible occurrence of the social and emotional problems which result from a rapid increase in size. Figure 4 gives us information on the different ages at which boys and girls reach the stage of maximum growth. It also shows the wide individual variations in age at which this growth spurt is reached. Notice that although the modal age for boys is 15 and for girls 12½, some boys reach this stage as early as 11½ and some girls as late as 15½.⁶

Figure 5 gives additional information on the wide variations in rate of growth which we are likely to encounter even among children of the same sex. The chronological age of each of the three boys on the left is 15, although vast differences are evident in their

⁵ Willard C. Olson, *Child Development*. Boston: D. C. Heath & Company, 1949, p. 25.

⁶ Shuttleworth, *op. cit.*, p. 5.

physiological development. Of the three boys on the right, the largest is the youngest, and the smallest is the oldest.

We know also that there is some relationship between the size of children and the age at which they will become physiologically

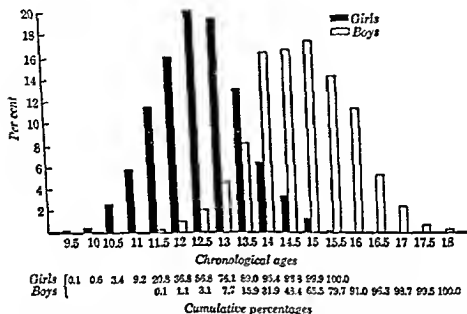


FIG. 4. Percentages of boys and girls becoming pubescent at each age level, as indicated by stage of maximum growth in standing height. Based on data from Shuttleworth, *op. cit.*, p. 5.

mature (pubescent). There is a fairly strong tendency for large children to reach puberty before small children do.⁷ The earlier occurrence of puberty among children who are large for their age may be another reason for the wide variation in interests found among children of the same age, and for the preference shown by boys for small girls and by girls for tall boys. During the junior-high-school years, the small girl is likely to have attained a stage of physical and emotional development and to have interests comparable to those of the average boy of her age and grade, while the tall boy is likely to be similar in these respects to the average girls

⁷ Harold E. Jones, "The Sexual Maturing of Girls as Related to Growth in Strength," *Research Quarterly*, XVIII (1947), pp. 135-143.

of his age and grade. The smaller boys are likely to be far less mature and the tall girls are likely to be far more mature than their grade mates.

Physical changes related to puberty

IN THE COURSE of development, some very important sex differences in physical structure arise. The differences in height and weight,

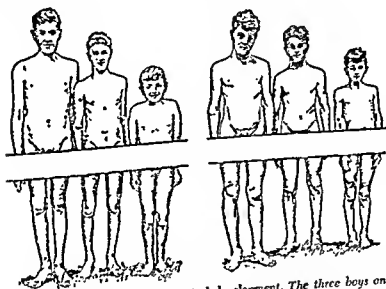


FIG. 5. Individual differences in physical development. The three boys on the left are all of the same age—15 years. The first is post-pubescent; the second is pubescent; and the third is pre-pubescent. Of the three boys on the right, the largest is the youngest and the smallest is the oldest. The first is 13 years one month old, and post-pubescent; the second is 13 years five months old, and pubescent; and the third is 14 years six months of age, and pre-pubescent. Based on H. S. Dimock, *Rediscovering the Adolescent*. New York: Association Press, 1937, p. 229.

particularly as they relate to social and emotional development, are important, but no less important are the changes in bodily proportion associated with biological maturity.

The hips of the girls tend to broaden and the breasts tend to enlarge rapidly prior to maturity. These changes may cause extreme embarrassment and, in some cases, considerable worry. A girl may begin rigorous dieting because she misunderstands the cause of her sudden increase in size. She may come to avoid physical exercise of any kind because of her awareness of the movements of her breasts. She may hunch her shoulders or stoop in an effort to de-emphasize her breast development. On the other hand, she may become quite proud of her change in appearance, especially if she believes that it will increase her social status among either girls or boys. The angle of the bones in the pelvic region is now becoming adjusted to the function of child-bearing. This, and the widening of her hips and the increase in her weight, will reduce somewhat her ability to participate in games. For example, at age 13 girls were found to be able to throw an indoor baseball an average of 71 feet and by age 16 had improved to but 73 feet. Boys of 13 averaged 116 feet and improved in three years to 145 feet. In the 50-yard dash, boys increased in speed as they got older, whereas girls decreased.*

The sex organs of the boy undergo a period of rapid growth during this period. He may become concerned about their being noticed through his clothing and he may feel either pride or shame when he undresses in the presence of others.

The adolescent period is considered to begin and childhood to end at the time the individual becomes biologically mature. We speak of this event as puberty. In girls the most striking of the physical changes that mark the transition from childhood to adolescence is the beginning of the menstrual periods, called the menarche. The menarche is known to occur on an average at about 13½ years in the United States. It has been observed to occur somewhat earlier in the central temperate regions and somewhat later in the colder and warmer regions. Actually, the attainment of sexual maturity among girls cannot be marked by a single easily determined characteristic. The physical changes that distinguish

* Harold E. Jones, "Sex Differences in Physical Abilities," *Human Biology*, XIX (1947), pp. 12-25.

the child from the adult occur over a period of time, and they do not develop in all individuals in the same sequential order. Although the first menstruation is a specific recordable event, subsequent menstrual periods ordinarily are highly irregular, at least for a time. Since it appears that the typical adolescent girl remains sterile for a period of from six months to a year following the first menstrual period, this event cannot be taken as an indication that full physiological maturity has been reached. In general, the first observable secondary sex changes in the girl are the rounding of the hips, followed at age 11 by the "bud" stage of breast development, and still later by the appearance of pubic hair.⁹

In the case of boys, there is no single physiological event that is commonly accepted as an indication of the beginning of the adolescent period. Marked changes in the voice, an increased activity of the sweat glands, the appearance of pigmented pubic hair, a rapid growth of the sex organs, a coarsening of the hair on the upper lip, and the appearance of hair in the armpits are among the physical changes associated with this period. Actually, girls experience these same changes, although changes in the tonal quality of their voice and in the character of their facial hair are not so great as in the case of boys. The increase in activity of the sweat glands in both sexes results in important problems for both boys and girls because of its conflict with the powerful combination of their sex and social drives, which demand that they attempt to be attractive and pleasing to others.

Some emotional disruption appears to be typical of the child in the period just prior to puberty and shortly after. This condition may be due as much to the child's need for understanding and accepting his changing physical characteristics as to his need for finding a solution for his newly experienced sex drives. In the California Growth Study, 83 girls and 93 boys were examined by a physician every six months for eight years. Each child was examined by the same physician throughout that period. The physicians reported that 38 of the girls (46 per cent of total) and 29

⁹ Olson, *op. cit.*, p. 25.

of the boys (31 per cent of the total) expressed concern about certain physical characteristics at one time or another during the eight years.¹⁰ These are probably minimum figures, since many of the children may not have revealed their concern to the physician. Table 1 contains a list of the physical traits that were mentioned by the children.

TABLE 1 *Physical traits that disturbed boys and girls**

Girls (N 83)		Boys (N 93)	
Tallness	7	Lack of size—particularly	
Fatness	7	height	7
Facial features	5	Fatness	7
General physical appearance	5	Poor physique	4
Tallness and heaviness	3	Lack of muscular strength	4
Smallness and heaviness	3	Unusual facial features	4
Eye glasses and strabismus	2	Unusual development in the	
Thinness and small breasts	2	nipple area	4
Late development	2	Acne	3
Acne	1	Skin blemishes, scars	2
Hair	1	Bowed legs	2
Tallness and thinness	1	Obvious scoliosis (spinal	
Big legs	1	curvature)	2
One short arm	1	Lack of shoulder breadth	1
Scar on face	1	Unusually small genitalia	1
Brace on back	1	Unusually large genitalia	1
	43†		42†

* H. R. Stolz and L. M. Stolz, *op. cit.*, p. 88.

† Represents duplication, since some had more than one disturbing physical trait.

Changes in interests related to puberty

THE BEGINNING of the adolescent period is of particular concern to you as a teacher. You will find sharp changes in the interests and attitudes of the child, and you will know that the child is being forced to meet many new problems that may threaten emotional and social adjustment. A discussion of specific observable trends

* H. R. Stolz and L. M. Stolz, "Adolescent Problems Related to Somatic Variations," *Adolescence*, 43rd Yearbook of the N.S.S.E., Part I (1944), pp. 80-89.

in these areas of development will be left for later chapters devoted to each area.

As we have seen, girls enter adolescence on an average of two years before boys. Even in a small group of children of the same age and sex, a period of many years elapses between the time when the first and the last reach puberty. Correspondingly wide variations occur in the interests and attitudes of boys and girls in the same classroom. The fact that one-half of the girls are biologically mature shortly after age 13, whereas one-half of the boys remain immature until age 14½ or 15, is of significance to the teacher who tries to plan a learning situation that will appeal to each child. Since boys and girls are usually grouped together in the same classroom, these differences in physical maturity, leading as they do to wide differences in interests and attitudes, present problems that otherwise would not arise.

There is another complicating factor: Although some girls are pubescent at age nine or ten, it is not until age 15 or 16 that nearly all are mature; and although some boys are pubescent at age 11, not until age 18 are nearly all boys mature. These variations between sexes and the wide individual variations among children of the same sex result in tremendous problems for the teacher as he seeks to devise reading matter, social groupings, illustrative materials, and teaching techniques that will appeal to all members of the class.

Maturation and readiness to learn

THE CHILD'S physical growth is important for other reasons, too. It has a direct bearing on his ability to learn—on his ability to profit from both his classroom and his extracurricular experiences.

Readiness to learn, at all grade levels and in all physical skills, depends on the child's prior experiences as well as on his level of maturation. Although in strictly scientific usage the term maturation refers to natural changes that take place as the individual grows older, in our discussion we shall use the term to refer also to the

changes that take place as the result of experience. Actually, these two factors cannot be separated, except artificially, in any learning situation. Readiness to learn reading, writing, geography, algebra, or literature, and readiness to participate in active games, all require both a certain level of maturation, in the strict sense of the term; and a certain range of experience. Learning to read, for example, requires coordination and development of the eyes, mental maturity, a background of experience, and a speaking vocabulary. Moreover, if the child is learning to read in a classroom, he must have attained a level of social and emotional development that will enable him to behave acceptably as a member of a group.

If it were not for all these aspects of maturation, our job as teachers would be relatively simple. We could simply group together all the children with the same level of educational achievement and forget the whole problem of individual differences. But the differences do exist, and we must accommodate them realistically.

Acquiring knowledge about sex

ANOTHER reason that the teacher must understand physical development is that, when necessary, he must be able to give children information on sex functioning and problems related to sex. Not that the school is the best possible place for sex education. The child who lives in a home where physical differences due to sex are treated as normal and natural is indeed fortunate, and the child whose parents are able to give him sex information as he needs it has perhaps the best opportunity to achieve desirable development. However, many children do not receive such instruction at home. They obtain their information from their peers and in the language of the street. Such information is likely to be highly emotionalized and at least partly erroneous.

One study indicates that from 50 to 90 per cent of the boys questioned obtained most of their information from male companions on items ranging from where babies come from to menstru-

ation, contraception, and prostitution. By age ten about 70 per cent of them knew that babies came from the mother, 10 per cent knew about contraceptives, 23 per cent knew about prostitution, and 3 per cent knew about venereal diseases. Yet only about one-fourth of the mothers had given the boys any information concerning babies and menstruation, and the fathers had given them almost no information concerning sex.¹¹ Even by ages 12 to 14 children ordinarily have little in the way of an accurate vocabulary, and use the slang of the street in their discussions of sex functions.

If the child is to accept the facts of sex as natural and normal, they must be so treated by the adults to whom he looks for guidance. Information concerning sex differences, functions, and problems must be offered in an atmosphere of mutual confidence and honesty rather than in a situation charged with intrigue and conspiracy. If the child sees that a mature, poised, and respected teacher regards sex as a normal process of development, he will make a healthier adjustment to sex than if the teacher avoids the topic and forces the child to gain his information from his peers.

Factors related to physical development

THE TEACHER's primary reason for studying human behavior is to acquire the ability to guide it into desirable channels. He must understand the conditions under which physical growth varies and the effect of variations on behavior.

Growth is determined largely by hereditary factors, but environmental factors also play an important role. We need to study both influences, remembering that it is not always possible to distinguish between the two. For example, if we find that tall parents tend to produce tall children and that short parents tend to produce short children, we should not immediately assume that this is a purely biological cause-and-effect relationship. It might be that tall parents tend to live in better neighborhoods, or tend to hold better

¹¹ G. V. Ramsey, "The Sex Information of Younger Boys," *American Journal of Orthopsychiatry*, XIII (1943), pp. 347-352.

jobs, and thus supply their children with better opportunities for exercise, better food, and better medical care.

An important professional trait that every teacher must strive to develop is to reserve opinion on any matter until he has obtained and evaluated as many facts as possible. Human behavior is extremely complex. Seldom will an understanding of one factor alone enable us to predict how an individual will respond to a specific situation. We must possess a knowledge of many factors, both hereditary and environmental, before we can understand even a part of the forces to which he is subjected.

Nutrition. Ample food of the proper kind is essential to proper physical development. Children living in slums have been found to average three to five inches shorter and from eight to 12 pounds lighter than children of the same age from more favored areas.¹² As we have seen, this situation may not be due only to the lack of proper nutrition or to the effect of environment. However, a study made in Great Britain of about 200 boys of ages five to 14 gives data that emphasize the importance of nutrition.¹³ These boys were given five pints of milk each week for seven months. During that relatively short time, they made an average gain in height of about one-fourth inch more than a similar group who did not receive the added milk. And their average gain in weight was about two-thirds of a pound more.

Data on the size of children ages six to 15 reveal that in 1938 (before World War II) the average boy in Paris, France, was six pounds heavier and about two inches taller than the average Parisian boy of his age in 1944. The most pronounced differences were found among boys ages 12 to 15.¹⁴ Within this range, older children were retarded much more than were younger children. A study of children whose parents suffered loss of income during

¹² Sidney L. Pressey and Francis P. Robinson, *Psychology and the New Education*. New York: Harper and Brothers, 1944, pp. 31-32.

¹³ White House Conference on Child Health and Protection, *Growth and Development of the Child*. New York: The Century Co., 1932, Part III, p. 431.

¹⁴ M. Laporte, "Effect of War-Imposed Dietary Limitations on Growth of Paris School Children," *American Journal of Diseases of Children*, LXXI (1948), pp. 244-247.

the depression period gives us still more information.¹⁵ These children showed a sharp drop in relative weight, whereas children whose parents had an adequate income maintained a high relative weight.

Size of parents. One of the most important influences on the physical growth of a child is the size of his parents. Tall children usually come from tall parents, and short children from short parents. We all know of instances in which short parents have had tall children and tall parents have had short children, but these are exceptions rather than the rule. It is true, however, that the children of extremely tall parents usually attain an average height somewhat less than that of their parents, and children of extremely short parents usually are somewhat taller on the average than their parents. Children show a tendency to deviate from normality in the same direction as their parents, but to a lesser extent. This is a general principle that applies to any marked deviations from average.

Apparently the average size of the young American of today is greater than it was a generation or two ago. In one study, college men were found to average 1.75 inches taller than their fathers, and college girls 1.1 inches taller than their mothers.¹⁶ In another study, college men in 1950 were found to be nearly two inches taller and 25 pounds heavier than college men of the same age who were in school during the period from 1900 to 1925.¹⁷ Findings on the size of children in Toronto in 1939 were compared with the records of a survey made in 1892.¹⁸ The 1892 sample included 13,000 children, and the 1939 sample included 71,000. In 1939, the average child of six was approximately two inches taller than in

¹⁵ Carroll E. Palmer, "Height and Weight of Children of the Depression Poor," *U. S. Public Health Service Reports*, L (1933), pp. 1106-1113.

¹⁶ G. T. Bowles, *New Types of Old Americans at Harvard and at Eastern Women's Universities*. Cambridge: Harvard University Press, 1932.

¹⁷ Alvin D. Ward, Edwin R. Elbel, and Kenneth E. Anderson, "Comparison of Bodily Measurements of Entering University Students," *University of Kansas Bulletin of Education*, VIII (1953), pp. 7-11.

¹⁸ H. V. Meredith and E. Matilda Meredith, "The Stature of Toronto Children Half a Century Ago and Today," *Human Biology*, XVI (1944), pp. 126-131.

1892, and at age nine he was three inches taller. These differences held for both sexes. At ages 12 and 13 for girls, and at age 14 for boys, the increase in height over the children of 1892 was approximately 3½ inches. Table 2 presents results of height and weight measurements made of the seven-year-old children attending the University of Iowa experimental school over a period of three decades.

TABLE 2* *Comparison of the mean height and weight of seven-year-olds in three successive decades*

<i>Decade</i>	<i>No. of Pupils</i>	<i>Mean Height (inches)</i>	<i>Mean Weight (pounds)</i>
1920-27	219	47.8	50.6
1930-37	240	48.4	53.1
1940-47	170	48.9	55.1

* From Howard V. Meredith, "Height and Weight of Private School Children in Three Successive Decades," *School and Society*, LXX (1949), pp. 72-73.

Intelligence. Many persons appear to believe that intellectually superior children show a tendency to be short, thin, and unhealthy. The gifted child is commonly pictured as wearing heavy glasses and having stooped shoulders and poor physique. But the actual evidence gives quite a different picture. One group of intellectually superior children (I.Q. 140 and above) maintained throughout life an average weight well above that maintained by intellectually average children. They reached puberty earlier and as a group they were in better health than the average child. At the adult level, the average height of the men in this group was 70.65 inches, which is about three inches above the average height for men in the United States.¹⁹

Another study of a group of children of I.Q. 135 and above showed an average height of approximately 5 per cent above the norm for their age in year-to-year measurements from ages seven

¹⁹ Lewis M. Terman and Melita H. Oden, *The Gifted Child Grows Up*, Vol. IV in *Genetic Studies of Genius*. Stanford: Stanford University Press, 1947, pp. 93-95.

to 15.²⁰ At the other end of the intellectual scale, data indicate that feeble-minded children are likely to be about a year behind normal children in physical growth at age seven, and by age ten the average retardation is about 1½ years.²¹

Remember, however, that all these reports are in terms of averages. Obviously, many brilliant children are short and thin, and many dull children are tall and heavy. A study of averages simply tells us about trends and gives us clues on the cause-and-effect relationships that are involved.

Nevertheless, there does seem to be some basis for the cartoonist's conception of the scholar as a short, skinny, weak, sickly individual. The brilliant child of good physique often has many interests. He spends time in social contacts, bobbies, and sports. But the child of average or superior intelligence who happens to be well below average in physical development may find adjustment to social contacts quite difficult. By retreating to books, he may gain the satisfaction that comes from good marks and the praise of teachers and parents. In addition, the brilliant child's progress in school may be accelerated to the point where he is a year or more younger than the other children in his grade. Thus he may be smaller and weaker than his associates even though he is superior to the physical norm for his own age group. This situation alone may create social maladjustment and cause him to retreat to books and scholarship.

Children who are above average in intelligence show some tendency to excel dull children in motor skills, but there are many exceptions. The bright child who devotes the same amount of time to practice is likely to attain higher proficiency in motor skill than the dull child. However, many bright children are clumsy and many dull children are skillful.

Since feeble-minded children as a group are considerably slower than normal children in learning to walk, to talk, to control elimi-

²⁰ Leta S. Hollingsworth, "Do Intellectually Gifted Children Grow Toward Mediocrity in Stature?" *Journal of Genetic Psychology*, XXXVII (1930), pp. 345-360.

²¹ C. W. Smith, "Growth in Height of Feeble-minded Children," *Journal of Genetic Psychology*, XXXVI (1929), pp. 330-341.

nation, and to develop coordination of eyes and hands, stages of physical development during infancy assume importance as possible predictors of intellectual ability. Although most psychologists believe that all normally healthy children are able to achieve average or superior intellectual ability if they are afforded a good environment, it is recognized that birth injuries are responsible for a number of cases of feeble-mindedness (perhaps 10 per cent) and extremely retarded motor development may accompany any brain damage that is severe enough to interfere with normal intellectual development.²²

Emotional strain. The mental health of the child and his physical development are closely related. His emotional problems are likely to be accompanied by digestive disturbances, difficulties in elimination, loss of sleep, and circulatory disorders. Part of the extreme physical retardation observed in children under war conditions may be due to the emotional crises arising from a disrupted home life and continuous fear.

Glandular abnormalities. Certain of the endocrine glands play an important part in determining the speed of growth, ultimate size, and relative proportions of the individual. They also determine, in part, intelligence and energy output. Detailed knowledge of the structure and function of the glands has little practical value for the teacher. However, some understanding of behavior abnormalities traceable to malfunctioning glands is of value to us. The teacher must at least be aware of these physiological factors in order that he may know when to suggest to the parent that a physician be consulted.

The *pituitary gland* frequently is called the "master gland," because its secretions appear to control the growth of the skeleton and to determine the rate and period of functioning of some of the other glands. An overactive pituitary gland seems to be related to early sexual maturity. The *thyroid gland* regulates the metabolism of the body. If this gland is underactive, the child is likely to be

²² Edgar A. Doll, "The Feeble-Minded Child," in Leonard Carmichael, *Manual of Child Psychology*. New York: John Wiley & Sons, Inc., 1946, p. 855.

overweight; if it is overactive, he is likely to be tense and nervous. The *adrenal gland* produces a substance that stimulates the individual in such a way that he ignores fatigue and becomes capable of performing physical feats beyond his normal capabilities. This secretion, *adrenalin*, is released during emotional states of fear and anger.

Male hormones (*androgen*) and female hormones (*estrogen*) are produced by both sexes. The balance between them in any one individual appears to be related to the degree of masculinity or femininity he exhibits. These secretions, which appear to be governed in part at least by the pituitary gland, control the development of the secondary sex characteristics.²³

Certain glandular disturbances are capable of producing both physical and mental disorders. The condition known as *cretinism*, which is caused by a marked deficiency in the functioning of the thyroid gland, is particularly important. The cretin is fat, short, and feeble-minded, and often is deaf and mute. This condition is found more frequently among girls than among boys. If cretinism is recognized early, treatment with thyroid extract often proves extremely beneficial.

Physical defects and chronic conditions²⁴

ILLNESS and physical defects of any kind are a major concern of the teacher. Although the actual death rate during the school years is lower than at any other period of life, illness sufficient to cause the child to miss school occurs frequently. When for any reason the child misses school for a time, you will be confronted with two problems when the child returns: You must provide him with an opportunity to master the subject matter and skills that the others developed during his absence, and you must help him to resume

²³ Olson, *op. cit.*, p. 55.

²⁴ See also Helen L. Witmer and Ruth Kotinsky (eds.), "The Influence of Physical Limitations," *Personality in the Making*, The Fact-Finding Report of the Mid-Century White House Conference on Children and Youth. Washington, D. C.: Harper and Brothers, 1952, pp. 60-83.

his place in the social group. During each school year, nearly half of the children have minor or major illnesses that necessitate absences. Consequently, the problem is of considerable importance. Also, many defects and chronic conditions may not remove the child from school but do interfere with his intellectual and social development.

Inadequate sight. The most frequent of all defects is inadequate sight. It has been estimated that about one-third of all children have defects of sight that may interfere seriously with school work if they are not corrected. There are many kinds of visual defects. Some eyeballs are too long, others are too short, and still others have irregular surfaces. Muscular troubles range from the easily noticed cross-eye or walleye to minor losses of focus that are seldom noticed by the teacher or parent. Eyelids frequently become inflamed and cause difficulty in classroom work. Although poor eyesight does not necessarily lead to poor school achievement, the extra effort the child must exert in order to attain a satisfactory level of achievement may result in headaches and nausea.

Inadequate hearing. Hearing loss sufficient to be a marked handicap occurs in only 3 per cent of school children. But even that proportion means that there will probably be one such child in any class. The teacher must be aware that poor hearing rather than dullness may be responsible for a child's failure to understand directions and assignments. As in the case of visual defects, children with poor hearing should be referred to a competent physician. In addition, the teacher will want to seat the child so that he can hear as well as possible.

Defects of mouth, nose, and throat. Defects of this type are considered in a single group because they often occur together. The child with infected tonsils is likely to have enlarged adenoids which lead to excessive mouth-breathing. Because of the interference with normal breathing and the draining of infection into the body of the child, infections of the ear may result. Many children have tooth decay that interferes with attention to school work and harms their general health.

Deformities. Such special conditions as paralysis, lateral curvature of the spine, club feet, deformed hands, lost limbs, and severe scars and birthmarks are particularly serious because of the problems in emotional and social adjustment that are likely to accompany them, especially during the adolescent period. The child finds that his defect deprives him of acceptance by members of the opposite sex, and, partially because of this rejection, he may no longer be accepted by his own sex. He becomes extremely unhappy as he finds himself handicapped in his struggle for self-sufficiency, security, and prestige. You can do much to help such a child accept his deformity and find his place in the group. The child must be given responsibilities that he can carry out and he must have reassurance that the skills and abilities he possesses will be fully utilized and developed. You should make every effort to accept the child as a worthy member of the group and should avoid any display of special attention that might set the child apart from other children. Normal acceptance by you as the teacher will help the child to become accepted by his peers and, perhaps even more important, will help him to accept himself as a normal member of the group.

Chronic conditions. Children with such chronic diseases as tuberculosis and severe heart conditions require special instruction in special classes if they are to continue in school.

Chorea, or St. Vitus's dance, sometimes constitutes a classroom problem. The most common symptom is jerking movements. In the earlier stages, the child may be restless, and may stumble and contort his face. Chorea occurs most often during the elementary school years and is observed most frequently among girls. It is believed to result from infection, perhaps of the tonsils. In severe cases, it is necessary to remove the child from school. The school can do little for a child so affected, and the emotional effect on other pupils may be undesirable.

Most teachers eventually will encounter an epileptic pupil in their classes. A convulsive seizure occurs and the child lies jerking on the floor. Care should be taken to see that the child does not bite his tongue, or choke when his tongue slips into his throat. During a seizure, the child may be placed on his side and a block

of soft wood may be put between his teeth. If a known epileptic is in the classroom, consult the school physician or the principal on what procedure to follow when an attack occurs. Here again, the emotional and social problems are great. The epileptic finds it difficult to adjust to his affliction, and the other students find it difficult to accept him. As in any emergency, a calm acceptance of the situation by you will do much to reassure the child and to prevent emotional stress among the other children.

Your responsibilities as a teacher

IF YOU ARE to understand an individual child, you must have information on the status of his health. For example, before you attribute difficulties in learning to read to lack of intelligence, you must know whether or not the child can see clearly. Before you try to remedy what appear to be habits of inattention, you must know whether or not he can hear clearly. You cannot expect a child to concentrate normally on the task before him if he is suffering from frequent colds, diseased tonsils, or decayed teeth. Even adults with good work habits find it hard to persist in a task when they are sleepy, or have a headache, toothache, or a bad cold.

Energy output is likely to vary from child to child as the relative level of health varies. These differences may be hereditary, or they may be due to glandular or other constitutional variations brought on in part by the environment. Although all physical defects cannot be remedied by medical treatment, you certainly must consider them in dealing with the child as an individual.

In addition to knowing the present health status of each child, you must also be familiar with his health history. Disciplinary problems may arise from poor health at present or from illnesses that are long past. A child who is handicapped or who has suffered frequently from ill health may be petted and spoiled at home. He may have been denied the play activities through which other children have developed social competence. He may have

learned to indulge in temper tantrums or even to feign illness in order to gain what he desires.

Each child, as you see him, is the product of an interaction between his hereditary pattern and the various forces of his environment. You must recognize that each trait has been formed by this interaction. Consequently, you must avoid disliking the child himself even though you greatly dislike the combination of forces that have made him what he is at the moment. Fortunately, you can introduce new forces to modify the child's socially undesirable attributes. You should strive to understand fully both his native potentialities and the influence his environment has had on him. The intelligent child, particularly, is highly modifiable. What he will be ten years from now is largely determined by the type of guidance, frustration, and success that he experiences during those years. As a teacher, you have an opportunity and a responsibility to exert control over these environmental forces.

In order to recognize the problems caused by individual deviations, you need to know as much as possible about the normal developmental process and the expected deviations for every age and each sex. You must be ready to play your part as an important environmental force by helping the child to achieve security and self-esteem through the development of socially desirable modes of behavior.

The control of communicable diseases is an important responsibility of the school. The teacher and the school nurse are the first line of defense against the spreading of colds and other diseases. Schools have come to recognize the necessity for preventive absences and have ceased to emphasize perfect attendance records.

Your rôle in building for each child a learning situation that is most effective in the development of his emotional, social, and intellectual potentials is also critical. Over-protection and emotionalizing may do the child great harm. Your goal is to enable each child to accept his limitations and to set and achieve goals in line with his potentialities. Although you may, with proper care, modify the environment of each child so that his opportunities for growth

are at a maximum, over-protection or over-guidance may be more harmful than an underdose of either.

In dealing with the handicapped, you will not be expected to take the place of the physician. You will make no attempt to diagnose or to treat the various physical ills to which children are subject. But you will be alert to symptoms of illness so that a physician may be called in when it becomes necessary. Ordinarily, you will report such symptoms to the principal or to the school nurse. Alertness for signs of physical difficulties will pay dividends in reduced emotional and social problems resulting from remediable sensory defects or ill health.

Problems and projects

1. Describe as well as you can at least five physically handicapped schoolmates from your elementary or high-school days. Describe the special problems presented by age mates and by the school curriculum which each must have encountered. Suggest how the teacher might best have contributed to the adjustment of each of the children.

2. Select a fact or principle presented in the text or in the Suggested Readings and show how you can apply it to the grade level or subject-matter area in which you expect to teach.

Suggested readings

Thompson, George G., *Child Psychology*. Boston: Houghton Mifflin Company, 1952. Chapter 1, "Studying the Child's Behavior and Development," pp. 1-34. (An excellent background of the history and methods of the psychology of human development.)

Baker, Harry J., *Introduction to Exceptional Children*. New York: The Macmillan Company, 1953. Part II, "The Physically Handicapped," pp. 27-217. (Although you may not have time to read this entire selection, it presents material of vital importance to the teacher.)

Additional resources

Baker, Harry J., and Mildred B. Stanton, "Identifying and Diagnosing Exceptional Children," *The Education of Exceptional Children*, 49th

- Yearbook of the N.S.S.E., Part II (1950), pp. 38-60. (Description of types of deviations from normal and discussion of the tests used to determine amount of deviation.)
- Gesell, Arnold, and Frances L. Ilg, *The Child from Five to Ten*. New York: Harper and Brothers, 1946, pp. 9-39. (Provides an orientation to the topic of child development.)
- Horrocks, John E., *The Psychology of Adolescence*. Boston: Houghton Mifflin Company, 1951. Chapter VIII, "Physical Growth," pp. 256-306, and Chapter X, "Strength and Motor Abilities," pp. 349-375. (A thorough coverage of the area of physical development; excellent illustrations and extensive bibliography.)
- Ingram, Christine P., and Henry C. Schumacher, "The Prevention of Handicaps in Children," *The Education of Exceptional Children*, 49th Yearbook of the N.S.S.E., Part II (1950), pp. 302-319. (Discusses diseases, hereditary defects, and birth injuries and suggests preventive measures.)
- Jones, Harold E., *Motor Performance and Growth*. Berkeley: University of California Press, 1949. (Presents a wealth of data on norms and individual differences in performance and growth.)
- Jones, Mary Cover, and Nancy Bayley, "Physical Maturing Among Boys as Related to Behavior," *Journal of Educational Psychology*, XLI (1950), pp. 129-148. (Discusses criteria used for determining physiological maturity and behavioral changes related to puberty.)
- McGraw, Myrtle B., "Maturation of Behavior," Chapter 7 in Leonard Carmichael (ed.), *Manual of Child Psychology*. New York: John Wiley and Sons, Inc., 1946, pp. 332-367. (Discussion of the methodology, findings, and theory of research; extensive bibliography.)
- Margolese, M. Sydney, "Mental Disorders in Childhood due to Endocrine Disorders," *Nervous Child*, VII (1948), pp. 55-77. (Deviations in physical development and some effects on the personality.)
- Olson, Willard C., *Child Development*. Boston: D. C. Heath and Company, 1949. The first 90 pages present rich bibliography, illustrations, and discussion of physical growth.)
- Pintner, Rudolf, Jon Eisenson, and Mildred Stanton, *The Psychology of the Physically Handicapped*. New York: F. S. Crofts and Co., 1941. (An excellent general discussion of the problems of the handicapped.)
- Stolz, Herbert R., and Lois Meek Stolz, "Adolescent Problems Related to Somatic Variations," *Adolescence*, 43rd Yearbook of the N.S.S.E., Part I (1944), pp. 80-99. (Presents discussion of the importance of the body as a symbol of the self.)
- Wallin, J. E. Wallace, *Children with Mental and Physical Handicaps*. New York: Prentice-Hall, Inc., 1949. (Chapters 9 to 21, pp. 260-525, give detailed descriptions and numerous photographs of a wide variety of physical deficiencies.)

Emotional growth and development

Every teacher must understand the normal pattern of emotional development and be able to recognize the most common emotional deviations and immaturities in order to plan childhood and adolescent experiences that will lead toward a high state of mental health. Undesirable emotional deviations must be recognized in their initial phases. In dealing with emotional problems, the professional teacher will do well to follow the pattern set by the modern pediatrician—that of preventive rather than curative medicine.

As we saw in the preceding chapter, individual deviations in physical growth and health tend to produce special problems that lead to related deviations in emotional and social development.

Emotional development is related to so many other aspects of life that it is difficult to think of it as a thing apart or to treat the subject of emotion as a separate topic. Emotion is a dynamic and integrative aspect of all behavior. Our loves and hates, fears and resentments, calms and turmoils, are intimately interwoven with our social behavior, our understanding of other people, our interests and attitudes, our ambitions for the future, our health and happiness, and all our daily activities.

Although it is difficult to define emotion exactly, or to distinguish one emotion from another, such terms as anger, fear, jealousy, love, and joy do have meanings that are commonly understood and accepted. By describing emotion as a stirred-up state of the entire body, we emphasize the pervasive character of emotion and the manner in which it affects the organism as a whole. In other words,

we can describe certain characteristics of emotional experience. Moreover, we can determine some of the patterns of growth in emotional expression, and we can identify deviations and their apparent causes.

Your interest in emotional development. As a classroom teacher, you will seldom be interested in highly involved and technical distinctions of vocabulary. You must deal with children, each of whom has a pattern of behavior different from that of any other child. Each child's pattern of behavior has been created by the interaction of his abilities and experiences. Many different attitudes, interests, abilities, and home backgrounds, and many different stages of physical, social, and emotional development, are distinguishable in any classroom or on any playground. Since you will be responsible for guiding the child not only as he acquires scholastic information and skills, but in every portion and aspect of his life, you must learn all you can about the problems, needs, and past experiences of the child; the important forces and potentialities present in all aspects of growth and development; and the ways in which the child's developmental life may best be nurtured.

In your preparation for teaching, you can draw on two sources of information: (1) the facts that have been obtained by observing individual children and groups of children in their *freely chosen* activities, and (2) the results of *scientifically planned experiments* with individual children and with groups of children. With this knowledge as a background, you can develop for yourself a valid understanding of the emotional problems of the child, and you can develop sound policies for helping each child to attain a healthy emotional maturity. You must appreciate that individual children differ from one another, but that all children follow certain general developmental patterns.

Winning emotional maturity. The winning of maturity is a long process—proceeding normally, each aspect of development requires years for completion. Some physically mature persons remain immature in many other areas; most persons retain some immature reactions.

Certain basic inherent forces, typical of the human race, deter-

mine the pattern of development and growth from infancy to maturity. In addition, each child is born with potentialities peculiar to himself. From the broad hereditary pattern and the individual deviations within it emerges the individual to be formed by the forces of his environment.

Emotional development and physical development are closely related. Here is one listing of the successive stages of physical growth through which the individual passes:¹ (1) the embryo (0 to 8 weeks), (2) the fetus (8 to 40 weeks), (3) infancy (from birth to 2 years), (4) the pre-school age (2 to 5 years), (5) childhood (5 to 12 years), (6) adolescence (12 to 20 or 24 years), and (7) adult maturity. As a teacher, you are primarily concerned with only two of these seven stages of development—childhood and adolescence. However, for an adequate understanding of development at any one age level you must know what development has already taken place; and, if you are to play an effective part in helping the child to attain his maximum level of development, you must know the trends of growth and the problems of adjustment typical of those stages of development that are still to be reached.

The general nature of emotional development

FOR MANY YEARS, psychologists have been interested in the basic forces that determine emotional development. Some children are afraid of many harmless things; others seem to have almost complete disregard for objects and situations that adults know to be dangerous. And the fears of many adults appear to have no rational basis; in some cases, the fear object itself is abstract or unidentifiable. Many adults fear darkness, the future, open spaces, solitude, running water, household pets, high places, or persons of the opposite sex. The fact that both children and adults differ so widely in the types of things they fear suggests that for the most part we learn what to fear. The same wide individual differences also exist

¹ Arnold Gesell and Frances L. Ilg, *The Child from Five to Ten*. New York: Harper and Brothers, 1948, p. 10.

in the situations or objects that arouse the emotions of love, anger, joy, sorrow, and jealousy.

Although Watson, the first psychologist to make a careful study of emotional behavior, believed that the bodily patterns of fear, rage, and love were present and distinguishable in the infant, later studies show that the specific emotional patterns continue to develop over a considerable period of time.

For example, Sherman² made a study of the ability of various observers to identify the emotional reactions of infants under eight days of age. Different stimuli were introduced, some of which, presumably, would make the infants angry while others would make them afraid. Nurses, medical students, and undergraduate and graduate students in psychology were asked to observe both actual situations and situations recorded in motion pictures. The observers were unable to agree on the specific emotion exhibited by the infants in either case. Although the judgments of trained observers were found to be somewhat more reliable than those of the untrained, the results of the experiment indicate that unless the stimulus used to produce a certain response is known, there is little agreement on what emotion the infant is experiencing. In general, it may be concluded that at this period in the child's development the responses of fear and anger are not clearly distinguishable. About all that observers can agree on is that the child is exhibiting general emotional excitement.

The emergence of emotional expression. Emotional development seems to proceed from a pattern of general excitement to the final emergence of the specific patterns of anger, fear, joy, jealousy, and the like. In one experiment,³ 62 infants one month to two years of age were observed daily in the Montreal Foundling and Baby Hospital. Records of their behavior were made for a period of three to four months. In each ward, all the children were of about the same age. The purpose of the study was to distinguish the stages in

² Mandel Sherman, "The Differentiation of Emotional Response in Infants," *Journal of Comparative Psychology*, VII (1927), pp. 263-284.

³ Katherine M. B. Bridges, "Emotional Development in Early Infancy," *Child Development*, III (1932), pp. 321-341.

emotional development as the children grew older. From birth onward, a gradual evolution of the emotions appeared to take place. Three stages of development in the emotional behavior of the young child were described by the observers. At first, the responses were of a general nature and appeared to lack any discernible organization, but later they became more definite and more nearly appropriate to the specific situation. Finally, the responses became integrated into patterns in which anger, disgust,

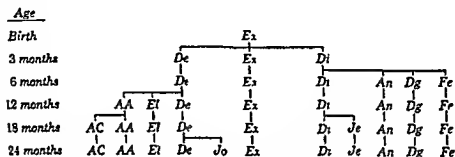


FIG. 1. Approximate ages of appearance of emotional reactions during first two years of life. Meaning of symbols: AA, Affection for Adults; AC, Affection for Children; An, Anger; De, Delight; Dg, Disgust; Di, Distress; El, Elation; Ex, Excitement; Fe, Fear; Je, jealousy; Jo, Joy. From Bridges, *op. cit.*, p. 340.

joy, love, jealousy, fear, and distress could be identified. Figure 1 shows the early history of emotional development as traced in this experiment.

Special patterns of emotional development

ALTHOUGH isolated studies of the child and of the adolescent suggest some of the important forces that determine emotional development, we gain a clear conception of developmental trends only by looking at the entire life-span. Comparisons of behavior at different age levels are more meaningful than are examinations of isolated periods of life. With this in mind, let us examine the life history of the three emotions most commonly identified: fear, anger, and love.

Fear. Among the more serious problems of emotional development are those connected with fears. The psychologist recognizes that many adult problems of insecurity, sexual maladjustment, withdrawal, and even extreme aggressiveness may grow from childhood fears. The ability to experience fear appears to be present soon after birth. At that time, any sudden and intense stimulus that appears to threaten the infant's security brings forth a startled cry and relatively random but extensive movements. The things feared gradually become more numerous through associations and through examples set by others. Most things that the older child fears, he has learned to fear. The child may learn to fear almost anything if it appears to threaten his security or if it has been associated with such threats or with a strong feeling of guilt. In addition to his fears of specific objects or persons, the child, as he develops mentally, may learn to fear relatively abstract events such as aloneness, darkness, failure, or the future. He may learn to fear to meet people or to write examinations; he may develop a general fear of all situations in which failure and loss of status are possible.

Studies of fears from infancy to maturity reveal the following general trends of development:

1. During infancy, fear reactions are limited almost exclusively to situations that appear to threaten immediate physical security.

2. During early childhood, fear reactions extend to somewhat more remote threats to physical security, such as parents, larger children, animals, and even imaginary events. These new fears appear to be learned from others, to be associated with previously learned fear situations, or to have developed because of an association with pain or guilt.

3. During middle and late childhood, fears of failure become common, even when the failure carries no physical threat. Fear of examinations, fear of losing father or mother, fear of losing prestige among friends, and fear of ridicule are common, as are specific and generalized fears of physical harm.

4. During early adolescence, some childhood fears remain and many new fears spring up. Fears of school failures, automobile accidents, disease, inadequate funds, sinfulness, temptation, social

incompetence, sexual experiences, and parental disapproval now appear.

5. During late adolescence the total number of specific fears declines sharply, although a few new ones appear. Fears related to money, personal adequacy, future success, clothes, and successful marriage appear most frequently at this stage.

Among civilized people, then, the trend seems to be from fear of specific situations to fear of more generalized threats as the individual matures. We find an unfortunate tendency toward persistent fear of possible future misfortune.

As we know, both adults and children frequently show fear reactions to situations that do not appear to present threats to their physical safety. Most of these reactions appear to have been learned in one of the following two ways:

1. *If one element of a situation proves extremely frightening to a child, he is likely to learn to fear all the other elements of the situation.*

An example is found in an experiment by Watson with an eleven-month-old boy, Albert.⁴ It shows how seemingly neutral elements of a situation become adequate to produce emotional reactions. Preliminary tests showed that Albert was unafraid of a white rat, a rabbit, wool, and similar items, but that he would cry violently when a sudden, loud noise occurred near him. In the experiment, a rat was placed near the child. He reached for the rat with his left hand and, just as he touched it, a metal bar was struck with a hammer. Albert jumped but he did not cry. He reached toward the rat with his right hand and when he touched it, the bar was struck again. At this point he began to whimper. A week later when the rat was shown, he hesitated but finally reached for the rat and jumped when the bar was struck. The next time he pulled back when he saw the rat and cried when the bar was struck. After a few more repetitions, the mere sight of the rat was sufficient to cause him to cry.

⁴John B. Watson and Rosalie Rayner, "Conditioned Emotional Reactions," *Journal of Experimental Psychology*, III (1920), pp. 1-14.

By the time the experiment had ended, Albert cried and pulled back not only at sight of the rat, but at the sight of a rabbit, a fur coat, a piece of wool, and even the experimenter's hair. Even a month after the experiment, Albert showed fear reactions, though the reactions grew less intense as time went on.

2. *Any situation or element in a situation that causes an adult or another child to show fright may produce fear in the child, particularly if the child is strongly dependent upon the other person for security.* For example, if the child's mother exhibits a fear of mice, the child is likely to learn the same fear. In addition, he may come to fear the room in which he experienced fright, or he may transfer his fear of mice to all furry objects. Such fears are easily acquired; one exposure may be adequate for long retention.

An examination of some of the studies of children's fears may help us to understand the development of other emotional patterns as well. Fear reactions have been discussed in detail by Kanner,⁵ who reports that fear is not an isolated complaint. He lists, in percentages, the problems that most frequently accompanied fear in the children who came to his attention. This listing is shown in Table 1.

TABLE 1 *Problems most frequently accompanying fear reactions in children**

<i>Problem</i>	<i>Percentage</i>
Sleep Disturbances	85
Feeding Problems	45
Temper Tantrums	34
Nail Biting	33
Enuresis	29
Crying and Whining	18
Masturbation	6
Stuttering	6

*From Leo Kanner, *op. cit.*, p. 599.

Since every child encounters situations that produce fear, let us consider some of the methods that are effective in overcoming it. In one experiment, 20 children, aged 39 to 54 months, were studied

⁵ Leo Kanner, *Child Psychiatry*. Springfield, Illinois: Charles C. Thomas, 1946, p. 599.

at the nursery division of Lincoln School in New York City.⁶ The experimenter was interested in observing the reactions of children to darkness and to height. Brightly colored toys were so placed that to reach them each child had to cross a board suspended in the air at heights ranging from two to six feet. With the board four feet from the floor, two children in the group showed a rather strong fear of height. Attempts were made to dispel their fear by reassuring them, taking them by the hand, accompanying them to the toys, and making them familiar with the situation in various other ways. As a result, one of the two children overcame his fear. Fourteen of the children were afraid to enter a dark room. The experimenters attempted to overcome this fear by providing the children with favorable experiences. For example, after a ball had been tossed into the dark room, each child was led in by the hand and taught how to turn on the light. Thirteen of the children who had shown fear of the dark improved considerably.

Of course, this experiment is far from conclusive. Only a small number of children was studied and no check was made to determine whether or not eliminating the fear of one specific dark room would eliminate or reduce the fear of other dark rooms. But the study does indicate one approach for overcoming a specific fear. This general approach involves recognition of the fear situation, pleasant experiences in the original fear situation, and security during the meeting of the situation. It has been used by numerous teachers, parents, and psychologists to help individual children overcome fears of various kinds.

Anger. The life history of anger is similar to that of fear. A general state of agitation is common to both. The young child becomes angry or afraid in response to specific, immediate threats; the adult responds to non-specific, remote threats and maintains his tension—broods or worries—over longer periods of time.

Among infants, bodily reactions to anger and fear appear indistinguishable. However, childhood temper tantrums and sulking may be classified as anger. An important conclusion gained from

our study of anger and fear is that not only does each person learn what reactions are most likely to be acceptable, but he also learns when to be angry or afraid.

The earliest anger reactions appear to result from conflict with parents on matters of dressing, eating, and toilet habits, or from conflict with peers for possession of physical objects. Among children, the interruption of play activities, the loss of a possession, and a thwarting of attempts to reach goals are the most frequent causes of anger.

Not only are the internal bodily reactions to anger and fear indistinguishable, but the circumstances that arouse them differ only in degree. Anger results from a threat to status that is not severe or immediate enough to cause fear. We change easily from one to the other of these states as our appraisal of the nature of the threat is modified.

As a teacher, you will be interested in the reactions of children to situations in which they are prevented from reaching their goals. In one such experiment, children's reactions to thwarting were studied and attempts were made to modify them.¹ Eighty-two children, three to six years of age, with a mean intelligence quotient of 122, were observed at the pre-school laboratory of the Iowa Child Welfare Research Station. The purposes were: (1) to identify those children who evinced undesirable modes of response in meeting problems, and (2) to attempt to aid the child to modify these responses in desirable directions. Two problems were used to identify the children with undesirable emotional responses. In one problem, each child was requested to arrange various toys in a shallow box in such a manner that he could still close the lid. The other problem required the use of physical force. In order to obtain several attractive toys, the child had to find a way to remove a heavy box that covered them.

On the basis of their responses to these problems, 15 children were considered to be immature. Twelve of these were given train-

¹ Mary E. Keister and Ruth Updegraff, "A Study of Children's Reactions to Failure and an Experimental Attempt to Modify Them," *Child Development*, VIII (1937), pp. 241-248.

ing of eight to 33 minutes daily over a period of six weeks. The purpose of the training was to make each child realize that his success or failure depended on his own efforts. He was given practice in solving interesting problems of increasing difficulty. As a result, the amount of sulking, whining, yelling, and other immature reactions was reduced. Although we might expect some of these same children to resort to crying or tantrums when they again meet problems that they cannot solve, training children to accept responsibility for success and failure is effective in reducing immature reactions. Children and adults develop competence and confidence in meeting problems only through experience in overcoming problems of increasing complexity. If they recognize that they are responsible for their own success or failure, they try harder and meet their problems more effectively.

Actually, not only in childhood but throughout life, the basic causes of anger are threats to status, interference with interests, and interference with established habits. The developmental pattern is merely from immediate to long-range and from specific to generalized threats.

Love. The emotion of love shows a developmental pattern from infancy through adult life somewhat different from that of fear or anger. Bodily structure, and its modifications with age, are more important in the life history of love. The physiological turmoil caused by sexual maturity has been mentioned previously. However, as in the case of anger and fear, the protection and preservation of the physical and psychological self appears to be the basic component of love throughout its history from infancy to death. The love of a child for his parents is primarily an expression of his need for the security and esteem they give him. Man's love for his mate stems from numerous sources. He can attain one form of immortality through his children and thus enhance his security and self-esteem. With his mate he forms a more secure unit than he can achieve as an individual, and her esteem for him satisfies a basic need. This simple explanation is made complex through a weaving in of sexual desire, but sexual desire is a mechanism necessary for the survival of all groups of animals. In human beings, when the

sexual desire is satisfied the result is both physical and psychological self-gratification.

In the normal development of the love emotion, three periods are distinguishable. First, the parents serve as love objects; second, persons of the same age and sex become the primary love object; and finally, love is transferred to persons of the opposite sex. Mothers are likely to be the first love objects of babies, and mothers and fathers are likely to be the primary love objects through late childhood. Of the two parents, mothers are likely to occupy first place throughout childhood for sons, and fathers for daughters. This may be due to the father's concern that their sons will become sissies if they are showered with attention, whereas daughters may be fondled and spoiled without fear of consequences. And mothers may actually show more affection for their sons. Teachers, as holders of adult authority and thus givers of security—a rôle similar to that of parents—may take a place along with the parents as love objects.

In the second stage, a person of the same sex becomes the primary love object. If this stage is not outgrown, problems may arise ranging from persistent pre-adolescent and adolescent "crushes" on friends or on an older person of the same sex to the development of homosexual behavior, in which sexual satisfaction is sought through physical contact with a member of the same sex. The danger of this homosexual deviation in development is common enough and serious enough to be recognized as a legitimate concern of the school. School parties, games, dances, cooperative class projects, field trips, class plays, cheering sections, musical groups, and departmental clubs are a few of the methods by which the modern school provides for the gradual development of a normal interest in the opposite sex.

It is desirable for the individual to direct his love to members of his own age group as soon as he is capable of feeling physical love. Over-protection and over-emotionalizing in the home may lead to dependence on older persons for love satisfaction. Children who are strongly attached to their parents are likely to resent their own maturation as a threat to their security. This dependence on

parental protection may continue into adult life with unhappy results, and, as the individual grows older, he may choose a mate considerably older than himself, may be unable to sever parental ties, or may form an emotional attachment for an older member of his own sex. Persistence of the parental attachment is an indication of emotional immaturity.

Some emotional problems of school-age children

THE CHILDHOOD YEARS are an important period in the development of emotional life. During these years the various aspects of development do not advance in straight lines or at regular rates. It is a period during which the child forms attitudes and makes adjustments that will color the rest of his life.

The child must learn to work and play with other children, to accept the routine of the school, to recognize the authority of adults other than his parents, to take care of many of his own physical needs, to read and write, and to become responsible for his own safety. He begins his journey toward emancipation from his parents, independence of thought and action, responsibility for earning and spending his money, and wise control of his leisure time. Social, emotional, physical, and intellectual problems arise which, unless solved in an acceptable fashion, result in additional and more complex problems as time passes. Consequently, as a teacher you will be especially concerned about the problems, the strivings, and the immaturities of children during this period.

Ordinarily, somewhere between ages 12 and 14 for girls and about two years later for boys, children reach puberty and enter the stage of life called adolescence. This stage continues until the individual, by reason of physical, emotional, intellectual, and social maturity, reaches an arbitrary but indefinitely outlined stage known as adulthood. The modern school plays a dominant rôle in the emotional development of the adolescent. The extracurricular activities carry the influence of the school into his social life and democratic methods of instruction encourage social interaction.

within the classroom. These social forces, together with the problems of adjustment to his newly acquired sex drives, strongly affect his emotional life.

In the emotional behavior of adolescents, the so-called "level of aspiration" is of particular significance. The adolescent aspires for many things that, for the moment at least, he cannot reach. When he strives to reach objectives beyond his mental or physical abilities, or beyond his financial means, he is likely to experience emotional reactions. It is often necessary for the school to assist the adolescent in adjusting his levels of aspiration to his potentialities.

For example, all children cannot possibly achieve grades of "A" under conventional methods of grading. Attractive rewards for those who cannot excel scholastically must be provided, so that the average or below-average child is not thrown into direct competition with children who are much more brilliant. Rewards in both extracurricular and curricular activities must be within the reach of every student. Each child's scholastic success must be appraised in terms of his progress in relation to his ability, rather than in relation to the attainments of more gifted children.

If adolescents fail to solve their problems in an acceptable fashion, they may resort to various types of undesirable behavior. (You will find a detailed discussion of these adjustment mechanisms in Chapter 13.) Emotional exhaustion or neurasthenia is a common symptom of unsuccessful adjustment that occurs most frequently during adolescence and early adulthood. Excessive daydreaming is another attempt to escape from problems. In an extreme state, it may occur as dementia praecox or as complete withdrawal from reality. Other means of escape that appear to compensate in part for failures or inadequacies are books, movies, or religious zeal. Rationalization, an adjustment in which a problem is minimized or a situation falsified, is often adopted. Headaches, digestive disorders, overcompensations, and stammering are other common symptoms of unsuccessful attempts to solve problems. Another pseudo-solution, and one that often leads to disciplinary troubles at home and in school, is belligerency.

Most of the angers and fears of the adolescent have already been

experienced in childhood, but the manner in which the individual expresses these emotions and the situations that arouse them change considerably as he enters adolescence. However, the bodily turmoil precipitated in the adolescent by his first love experience is tremendously unexpected. His patterns of previously learned behavior are inadequate to meet this new situation.

Environmental factors and their influence

HEREDITARY differences in physical structure explain only a small portion of the differences in emotional behavior evidenced by adults and even by young children. Rather, most differences in emotional development are caused by varying environmental factors. Consequently, we shall examine a few of the more important environmental forces in some detail.

The home. The emotional maturity of the parents is important in determining the emotional development of the child. The parents, quite apart from the wealth or status that they are able to provide, occupy a central position in the child's world. His sense of security and of personal worth stands or falls with them.

Tryon and Henry⁸ suggest that the child forms his conceptions of the nature of himself and the nature of others by generalizing from his experiences with others. He may conclude that he is a good and successful person or a guilty and worthless one. He may decide that the world is a pleasing and satisfying place or that it is not. He may find that the way to get things from others is to smile and be pleasant, or he may learn to cajole, to bargain, or to domineer. Because the mother and father are likely to be closest to the child, their actions will do most to determine his concept of himself and of the world. Since the child of overly strict parents is likely to be unduly concerned with problems of right and wrong, his social adjustment may be handicapped. The child of parents

⁸ Caroline Tryon and William E. Henry, "How Children Learn Personal and Social Adjustment," *Learning and Instruction*, 49th Yearbook of the N.S.S.E., Part I (1970), pp. 150-182.

who are inconsistent in their discipline tends to take a chance on disobeying. The child of over-indulgent parents tends to become selfish and to view requests by others as infringements on his rights. The child of an overprotective mother fails to develop independence; a boy so protected may later find difficulty in working as an equal with men. The child with a brusque, aggressive father is forced to cling to his mother or to seek sources of emotional attachment outside the home.

The type of discipline employed in the home and the feeling of the child that he is wanted and is secure are important influences in his emotional development. In discipline, the critical factor appears to be consistency rather than degree of severity. The child needs to be able to determine the rules that govern his world. If these rules are consistent, he can usually adjust to them, whether they are harsh or liberal. But if they vary from day to day and from person to person, he becomes insecure.

The child needs to feel that he is wanted and is valued by the adults in his world. If he feels that he is losing his place and is no longer secure, he will make an active attempt to restore his security. He may exhibit jealousy, aggression, or attention-seeking behavior.

In a study⁹ of the influence of parents on emotional instability made at the University of Wisconsin, more than 400 students were given the Bernreuter Personality Inventory and the Wisconsin Scale of Personality Traits. Fifty of these students, 28 men and 22 women who were freshmen at the university in 1932, furnished complete autobiographies. Factors in the home environment were studied and an analysis was made of answers to the questions on the personality tests. Unstable men were found to be more antagonistic toward their fathers and unstable women more antagonistic toward both parents than were stable men and women. The man who in late adolescence showed a definite preference for his mother rather than for his father was found likely to exhibit general emotional instability. It appears that either parent will be rejected or clung to when the child is given an opportunity to assume adult patterns

⁹ Ross Stagner, "The Role of Parents in the Development of Emotional Instability," *American Journal of Orthopsychiatry*, VIII (1938), pp. 122-129.

and responsibilities. In such an environment, the child has the best opportunity for developing a sound emotional life.

A somewhat different approach to this same problem was used in another study of the emotional attachment of children to their parents.¹⁰ Answers were sought to two questions: (1) Is there a difference between the degree of association and the quality of affection of delinquents and of non-delinquents for their parents? (2) If there is, does it account in part for the delinquency? Two groups of boys were studied. Group I consisted of 25 delinquent boys examined at the Bureau of Juvenile Research in Columbus, Ohio. Group II was composed of 25 non-delinquent boys from the Lazarus Scout Reservation near Columbus. Group I had a mean age of 13.5 and Group II a mean age of 13.1. Since most of the delinquent group came from the lower-income brackets, an attempt was made to choose from the non-delinquent group only those who were average or below in socio-economic status, in order to eliminate the influence of this factor. The average intelligence of the two groups was approximately the same. Each boy was asked to complete three stories. In each case, the first portion of the story was read to the boy and he was asked to supply the ending. Story I was designed to determine the depth of his attachment to his parents. In story II, he was faced with a choice between the advice of his parents and that of his playmates. And in story III he revealed his responsiveness to the standards of behavior put forward by the parent in the story.

A study of the endings supplied for story I indicated that 80 per cent of the non-delinquent group, and only 40 per cent of the delinquent group, would go to their parents for advice. No significant difference was found in the responses to story II. But in story III, 96 per cent of the non-delinquent group chose to follow the parent's advice while 76 per cent of the delinquent group indicated that the advice of the parent would be disregarded. It is apparent that the moral doctrine of the parents had more influence on the

¹⁰ Herbert Zucker, "The Emotional Attachment of Children to Their Parents as Related to Standards of Behavior and Delinquency," *Journal of Psychology*, XV (1943), pp. 31-49.

goals set by the non-delinquents, and that the relationships of non-delinquents to their parents resulted in closer emotional ties than existed between delinquents and their parents.

There is no doubt that the moral values accepted by children affect their actual behavior. In an effort to prevent or cure delinquency, one approach is to provide in the child's environment a person to whom the child can become closely attached and whose guidance he will accept. Thus, the teacher possesses a far greater potential for helping or injuring insecure or rejected children than he does for children who have a secure relationship with their parents.

Motion pictures. From our own personal observations, from conversations of children, and from attendance reports and published studies, we know that children invest a large amount of time and money in attending movies. What is the effect of movies on the emotional health of children?

In one study¹¹ of the emotional excitement caused by motion pictures, it was found that children showed strong physical reactions to scenes that had little effect on adults. In some cases, visceral reactions did not subside for 24 hours. Scenes involving either conflict or love brought about considerable excitement; boys reacted more strongly to the scenes suggesting danger than did the girls. There were no clear sex differences in response to the love scenes. Increased rate of heart beat was general during all pictures. In all situations, 16-year-olds evidenced more excitement than did either the younger or older groups.

Although we cannot say that excitement as such is harmful to children, excitement that results in loss of sleep, interference with digestion, or prolonged disruption of the rate of heart beat, if experienced frequently, seems to pose some threat to both emotional and physical health. As a teacher, you will have an additional interest in the problem. The child's desire for new and thrilling experiences will often help you to create effective learning situations.

¹¹ W. S. Dysinger and G. A. Ruckmick, *The Emotional Responses of Children to the Motion Picture Situation*. New York: Harper and Brothers, 1933, pp. 110 ff.

If this desire is satiated by the movies (or by radio or television), an important psychological need has been satisfied and opportunities for classroom learning have been diminished.

Radio and television. What has been said about the movies holds true with some modifications for radio and television programs.¹² Since the radio does not provide visual stimulation, it lacks some of the reality of the movies. But this deficiency is now being supplied by television. Although radio and television programs are of shorter duration than movies, a long series of successive programs will effectively prolong the excitement. Moreover, if in his home the child listens to or views programs based on fear situations, his home environment may become less secure and the home may become less usable as a place for peaceful repose. However, hearing the program in the security of the home may make the program less fearful. If the child listens to a program just before going to sleep, the situations involved are more likely to persist in his dreams than if the child comes home from a movie to a secure environment and experiences a change of activity before going to bed. In this respect, the stimulation received from the movie may do less harm than that from radio or television.

Books and comics. A generation ago, adventure stories read in secret had a significant effect on the emotional life of children. Today, however, such stories seem to make up the reading fare of adolescents and adults. Modern children turn instead to the picture comics.

At least the adventure stories encouraged the child to learn to read; and, since he had to rely somewhat on his own creative imagination in following the plot, he may have gained some positive benefit.

Comics, however, along with radio, movies, and television, have displaced the adventure or love story as a source of emotional stimulation. The main reason is probably that less effort is necessary to obtain stimulation from these modern media. Although some comics are informative and do emphasize positive values of good

¹² See "Influence of T.V. Crime Programs on Children's Health," *The Journal of the American Medical Association*, CL (1952), p. 37.

citizenship and good ethical conduct, the choice of subject matter seems usually to be based on the publisher's desire for increased sales. Consequently, far too many "comic" books deal with crime, sex, violence, horror, and any other topic that is likely to furnish sales appeal. Little reading is necessary to create the desired emotional reaction, and the net educational worth of most such publications is negligible.

General effects. Psychologists generally are convinced that excessive and prolonged emotional stimulation is harmful to mental and physical health, regardless of its source. It is not entirely clear which is the worst offender against the emotional health of children—movies, radio, television, or comic books.

Of course, the producers of these forms of entertainment are not deliberately attempting to undermine mental health. They simply produce the material that will attract the most watchers, listeners, or readers. They are eager to have the opinions of parents and teachers, and they are particularly sensitive to losses in attendance and to lowered sales of the products they advertise. Interest and action on the part of parents and teachers would help to eliminate the most offensive offerings.

Some group differences

LET US TURN now to the effect of the broader cultural influences on the emotional development of children. As with so many environmental factors, the individual's emotional response to these influences is learned rather than inherited. We are accustomed to say simply, "Yes, culture, economic status, schools, teachers, and parents do have an effect on the emotional development of a child." But we seldom go beyond this bare acceptance of fact and try to determine to what extent or in just what way these factors actually influence the direction of the child's emotional growth.

People in different cultures tend to react emotionally in different ways. Even within our own country we have vast differences in behavior in various geographic areas, in different races, and in different national groups. One group may expect its members to

repress their feelings, while another may expect more overt, even extravagant, emotional expression. Insecure groups as well as insecure persons may find it necessary to compensate through loud voices, physical aggression, or unusual clothing. The "cultural pattern" of the individual family is important. In some home environments, children cry rarely, while in others crying or hysterical outbursts are common events. We must realize that we can use a child's emotional responses as a cue to his individual needs only if we relate those responses to his environment, prior experiences, and abilities. Thus behavior that would indicate normal emotional adjustment in a child of New England or perhaps American Indian background might indicate severe repression in a child from a group that typically is freer in emotional expression.

Cultural groups. Some years ago, an interesting study was made of the differences in emotional pattern among persons from different cultural groups.¹³ The Brown Personality Inventory was used. Answers considered to be indicative of maladjustment were placed in one of five general categories of symptoms: physical symptoms, expressions of anxiety or insecurity, home maladjustments, school maladjustments, and indications of irritability or sensitiveness. Seven hundred and twelve children, nine to 16 years of age, in eight cultural groups, were studied. These groups were: Cleveland Gentiles of high socio-economic status; Cleveland Jewish in the same school and of the same socio-economic level; foreign rural of low socio-economic status living in villages and outlying sections near Buffalo, Ohio; American rural of very low socio-economic status in the same schools as the foreign rural; children of low socio-economic status living in the business and industrial areas of Columbus, Ohio; children of average socio-economic status living in residential sections of Columbus; children of high socio-economic status living in suburban sections of Columbus; and a rural American group of high-average socio-economic level attending a centralized school at Galloway, Ohio.

¹³ Fred Brown, "A Comparative Study of the Influence of Race and Locale Upon Emotional Stability of Children," *Journal of Genetic Psychology*, XLIX (1936), pp. 325-342.

The Cleveland groups, both Jewish and non-Jewish, were found to possess superior adjustment; the Columbus high socio-economic group compared favorably with the two Cleveland groups and the rural high-average and the Columbus high-average groups were similar in adjustment despite the rural-versus-urban factor. The American and foreign rural groups of low socio-economic status made the poorest adjustment scores. The adjustment scores were found to improve as the socio-economic level increased. So far as could be determined by this study, differences in emotional stability between racial-rural-urban groups appear to depend chiefly upon socio-economic status rather than upon locale or race. The higher the socio-economic level of the family, the greater chance the child has of being emotionally stable. This study indicates that a close relationship exists between degree of adjustment and socio-economic status.

Socio-economic groups. In a study of a large number of high-school students, the author found a positive relationship between socio-economic status and emotional adjustment scores made on the Bell Adjustment Inventory.¹⁴ This finding may indicate that the security felt by the child from the average or superior home as he deals with his peers and with adults is strong enough as a determinant of emotional stability to be measurable by even fairly rough instruments. Part of the relationship may be due to the opportunity for mothers in higher-income homes to spend full time as homemakers. It is possible, however, that the relationship between emotional adjustment and socio-economic status would be found to decrease at the upper end of the scale, where servants carry a larger portion of the responsibility for the children.

Sex differences. Although sex differences in scores made on tests of emotional adjustment have been reported, they are probably related to differences in what constitutes socially acceptable behavior. For a girl to show fear at sight of a snake and to grasp the

¹⁴ Henry P. Smith, "A Study in the Selective Character of American Secondary Education: Participation in School Activities as Conditioned by Socio-Economic Status and Other Factors," *Journal of Educational Psychology*, XXXVI (1945), pp. 229-248.

arm of the nearest male not only may be acceptable behavior, but rewarding as well. If a male were to exhibit such behavior, he would be punished by loss of status with his peers.

Regardless of the reason for sex differences in behavior, we should at least be aware of them. In a study of scores of 1,700 senior-high-school students, the author found that the average emotional maladjustment score was 12.38 for girls and 7.35 for boys.¹⁵ This rather substantial difference at least suggests that boys of high-school age are better adjusted than girls of the same age.

Some individual differences

CHILDREN at play or at work exhibit wide variations in their physical reactions to the emotions of fear, anger, and enjoyment. Some are noisy, others are quiet. Some respond quickly to the emotions of others in the group, others are more independent in their reactions. Over a period of time, the emotional state of some children changes from moment to moment; others tend to maintain a particular emotional state for a longer period of time. Some children are relatively calm and serene, while others appear tense and disturbed. After an emotional upset such as anger or fear, some children return rapidly to a normal state, while others do so slowly.

These differences in emotional reactions appear to be explainable on the basis of environmental differences, but the possible influence of hereditary factors is certainly not ruled out. The security of the child in his home is reflected in a feeling of security in all social groups. His favorable and unfavorable past experiences with brothers and sisters, playmates, and adults contribute to a sense of well-being or a feeling of helplessness in social groups. Consciously or unconsciously, he imitates the patterns of emotional behavior followed by his family and close associates. The rewards or penalties he has experienced as a result of past methods of emotional expression serve to govern his present behavior. How well he knows

¹⁵ Henry P. Smith, "The Relationship Between Scores on the Bell Adjustment Inventory and Participation in Extracurricular Activities," *Journal of Educational Psychology*, XXXVIII (1947), pp. 11-16.

other members of the group, and how well he is accepted by them, are also important factors.

Control of the emotions

THE BODILY reaction to fear and anger is sharp. Apparently it is designed to prepare the organism for strong *physical* reaction. For the momentary and occasional purpose of meeting an actual physical threat to existence, it is not too important that digestion be impaired, that the heart be somewhat overburdened, that sleep be pushed away, and that interest in sexual activity be stamped out. In short, as a pattern to be used when survival is threatened, some immediate discomfort or even damage is not important if it helps the individual to survive. However, these same reactions aroused in anticipation of possible non-physical threats are of little value. If they are frequent and prolonged, they may cause physical damage. Thus the worry and brooding of civilized man, resulting in physical reactions designed to meet immediate dangers, may do great harm through frequent and prolonged disruption of his normal bodily processes. There appears to be grave doubt that in a civilized environment the inherited fear and anger pattern has any net benefit for the individual. For this reason, we shall be interested in the possibilities for control of emotional behavior.

Although the *specific* overt behavior that an individual displays in response to emotional stress appears to be learned behavior, all people experience the same *general* physical responses to emotional stimulus.

Our control over our physical responses to emotion is limited. In fact, only the skeletal muscles are subject to significant voluntary control, whereas the other parts of the body involved, such as the heart, smooth muscles, and the glands, are not. However, our control over overt behavior does have an indirect effect on the parts of the body beyond our voluntary control. For example, when we speak and gesture in an attempt to create emotional responses in others, we find that we ourselves share in the desired response. When we try to excite others by suggesting excitement in our overt

actions, we tend to become excited ourselves. And when we try to reduce the emotional agitation of others, we too become soothed. So, although much of our body is not subject to direct voluntary control, we can influence our internal responses to emotions by controlling our overt behavior.

In the classroom, the teacher's voice and manner do much to determine whether the class will be relaxed or tense, quiet or noisy, interested or bored. At the same time, the teacher's behavior serves to allay or heighten his own emotional tensions.

Ordinarily, emotional tension results when an individual feels inadequate to cope with a situation. Helplessness or hopelessness can scarcely be experienced without a strong feeling of inner emotional turmoil. As the individual matures and learns to master a wider variety of constructive means for meeting new situations, he is less likely to become hopelessly discouraged when attacking new problems. Parents and teachers should encourage children to make constructive attacks on new problems and should attempt to provide them with the maximum number of successes. The child who has difficulty in achieving satisfaction from academic work, for example, might be given an opportunity to succeed as a school patrolman, in school plays, in hobbies, and, perhaps, in music, art, or athletics.

In a study of how emotional control is achieved, two groups, each made up of 233 high-school students comparable in age, sex, I.Q., and achievement-test scores, were chosen.¹⁶ Over a period of three years, the members of one group were given careful individual guidance in solving adjustment problems. The members of the other groups were given only such guidance as they would ordinarily receive in a school guidance program. After three years, the members of each group were studied to determine whether or not significant differences in emotional stability had developed. Although the differences observed were not great, they indicated that the group that had received help in solving adjustment problems was more stable emotionally.

In your teaching, particularly in the early grades, you must take

¹⁶G. M. Worbois, "Effect of a Guidance Program on Emotional Development," *Journal of Applied Psychology*, XXXI (1947), pp. 163-181.

responsibility for guarding against the development of strong fears or persistent, undesirable anger reactions among children. Certainly you can exercise some control over the school environment. Since fear and anger ordinarily arise only when a child is helpless to meet a situation in any other way, it appears that the child's insecurity contributes strongly to the emotional response. The common factor in many fear situations is the suddenness and unexpectedness of the stimulating event. If we can prepare the child beforehand for a situation that is likely to prove frightening, he will feel more secure when he actually meets it. Thus a visit to a fire station, railway station, or an airport, or what happens during a fire drill, or what horseback riding is like, should be discussed with children in advance.

Insecurity or security in a situation is a matter of degree and is determined by many factors. The familiarity of the physical surroundings and their freedom from threat or memory of threat are important factors. Ordinarily, a child is less easily frightened in his own home or yard than in the home or yard of another child or in the classroom. And he is more secure in the classroom after he has had some acquaintance with it than he is in the school auditorium. The social group and the specific individuals in it also determine the degree of security. The child is less easily frightened when he is with others than when he is alone; he is less easily frightened when he knows the others well than when he does not; he is less easily frightened when he feels secure in his relation to the others than when he does not. Of course, if one child in a group shows strong, vocal evidence of fear, his behavior is likely to disturb the entire group. But on the whole, a child is less likely to feel fear when other children are present.

The confidence and bearing of the adult leader also have a strong influence on the child's feeling of security. Even physical closeness to the adult seems to be an important factor. The timid child is less likely to be frightened by a sudden stimulus if he is near the leader, is holding his hand, or is somehow reassured of the leader's stability.

Any type of barrier, physical or spatial, between the child and

the fear stimulus tends to increase security. The sudden jump of a frog on the other side of a fence or a glass wall, or at a considerable distance away, is less frightening than when the child feels exposed to the danger. There are three reasons why distance from the stimulus is an important factor: the possible danger is less immediate, the speed of movement appears to be reduced by distance, and the impact of the noise that may accompany the stimulus is sharply reduced by distance.

Past experience with similar situations is a strong factor in promoting security. A child familiar with the rush of a locomotive is less likely to be frightened by the roar of an airplane than one who is not.

To keep fear at a minimum, the child must feel free to move away from the stimulus. For example, when a frog is shown to children in the classroom, each child should be permitted to approach it or to retreat from it as his own feelings dictate. In no case should an unfamiliar object be presented in such a manner that retreat is impossible.

You will find a knowledge of these general characteristics of secure and insecure situations is valuable not only in avoiding the chance that children will develop fear but also in removing fears that already exist.

If a child has a fear of locomotives, we certainly would not put him alone on a station platform with his back to a wall and make him watch locomotives go past. If we were to show him a real locomotive at all, we would have him stand at a substantial distance, close to an adult or two in whom he has confidence. Ideally, he might be shown his first locomotive while he was watching through the windshield of the family automobile. If his fear was very great, we might begin treatment by showing him pictures of locomotives and gradually work up to an electric train before we planned experiences with real locomotives.

Strong anger reactions can be prevented or corrected in much the same way as fear patterns can. Again, helplessness and general insecurity appear to be the basic causes of children's outbursts of anger and quarreling. By helping the child to develop confi-

dence in himself and in the social situation, we can reduce the number and violence of these outbursts.

Effect of the school

SO FAR, we have been talking mostly about undesirable emotional responses and the behavioral deviations they create. But we must remember that our emotions also enable us to have pleasant, desirable experiences, both as individuals and as members of the community. All of us seek situations in which we can experience relaxation and pleasure, elation and affection. We tend to avoid situations in which we feel anxious, afraid, angry, jealous, or disgusted.

In planning the school curriculum, we include certain experiences that need no justification other than the joy and elation they provide children. Painting, music, sports, crafts, and various co-operative social endeavors are often justified as a preparation for later life, but they can also be defended on the basis of the immediate values they bestow. Any child, expert or not, can, with skillful guidance, derive from such activities valuable emotional satisfactions that may do much to make his entire school experience a satisfying one.

The pleasure that the child experiences by engaging in music, arts, crafts, and sports may make him less vulnerable to anger, to jealousy, and even to fear. And his participation in these activities may so increase his social competence that he will feel less helpless, hopeless, and friendless in later situations.

As teachers, we are interested in the specific effects of each of the many school experiences on the emotional development of the individual child. An environment in which the child spends so many hours of his formative years is bound to have important effects on his personality, even when only reading, writing, and arithmetic are emphasized. Since school learning takes place in a social setting, it has great potentialities for a positive effect on personality. How can we eliminate the undesirable forces from the school environment and emphasize the desirable forces?

Examinations. Fears of examinations are mentioned by children more and more frequently as they grow older. They are among the most commonly admitted fears of adolescents. To be evaluated and found inadequate, or even not quite as good as someone else, can be an extremely unpleasant experience. It thwarts the child in his attempt to satisfy the fundamental needs for self-esteem, esteem of others, and security. Some emotional tension, therefore, is to be expected every time an examination is taken, since even the students who ordinarily make the highest grades are not certain to do well on every examination.

One study of the physical tensions evidenced by college students during examinations was made at the University of Chicago.¹⁷ The purpose was to determine what physiological changes take place before and during examinations. Four readings of normal blood pressure, pulse rate, and respiratory rate were obtained on four different non-examination days from each of 98 students. These normal readings were compared with readings taken within an hour before the examination and, in the case of 46 of the students, with readings taken just after the examination. Also, urine samples, taken an hour before the examination from 65 of the students, were tested for sugar and albumen. In addition, the sugar levels and red and white cell counts of normal blood samples were compared with those of samples taken from 10 students an hour before the examination. The results indicated that the greatest average change in blood pressure, respiratory rate, and pulse rate occurred before the examination that was based on the largest unit of work and that required the longest preparation. Nine of the 10 students tested for blood sugar showed increases before the examination. The count of blood cells failed to yield significant information. However, 14 of the 65 tested showed sugar in the urine before the examination. This study indicates that changes in emotional state before an examination are very real and that they vary with the magnitude of the task the student faces.

¹⁷ Charles H. Brown and David Van Gelder, "Emotional Reactions before Examinations: I. Physiological Changes," *Journal of Psychology*, V (1938), pp. 1-9.

A study of the fear of an examination, which we have all experienced in some degree, gives us an insight into the basic causes of all fear reactions. The physical expressions of fear are mere symptoms of our need to defend our psychological or physiological selves. No one attains complete security or the ultimate in self-esteem. And our insecurity is particularly noticeable when we must allow another to evaluate our status in relation to our fellows.

The teacher. Of all the environmental forces that influence the child's personality, the social situation itself is the most dynamic and powerful. Actually, personality has little meaning except as it is considered in a social setting. Consequently, anyone with whom a child has day-to-day contact exercises considerable influence on the development of the child's personality. Your attitude as a teacher will unquestionably affect the way each child will react to you, to the school subject that you teach, and to school in general. If you lose your temper, have favorites, or act in an overbearing way, you are likely to stir up resentment among the students that will produce disciplinary problems. In addition, by reason of your adult status and your authority, you are likely to be used as a model as the child seeks to achieve approved patterns of behavior. Although many discussions have been published on the general effect of teacher adjustment on pupil behavior, few actual data are available.

In one study, an attempt was made to determine whether or not stability in the teacher tended to be accompanied by stability in the children.¹⁰ Seventy-three teachers and 1,095 students from the fifth and sixth grades of the Nashville city schools took tests of emotional adjustment. The pupils studying with the best-adjusted one-fourth of the teachers were compared with the pupils studying with the most poorly adjusted one-fourth. Although the differences in the average emotional adjustment scores of the two groups of children were not extremely large, the results indicate that emotionally unstable teachers tend to have pupils who are less stable

¹⁰ Paul L. Boynton, Harriet Dugger, and Masal Turner, "The Emotional Stability of Teachers and Pupils," *Journal of Juvenile Research*, XVIII (1934), pp. 223-232.

than are the pupils of teachers with superior emotional adjustment. Obviously the mental health of the teacher, as well as his experience and training, has a direct influence on the welfare of children. Your attitude toward a child with a school problem may be as important as the child's intellectual status or the emotional conditions he experiences at home. Conflict between the child and his teacher may, in fact, be the basic reason for his problem. Poor schoolwork may be the direct result of antagonistic attitudes on the part of teachers.

That such situations occur need not be interpreted as damning criticism of teachers. After all, teachers are human beings, with all the usual strengths and weaknesses. A child may try a teacher's patience to the point where they will both benefit from a change of company. A teacher may find it difficult to be endlessly sympathetic and understanding toward a child whose behavior is monotonously emotional. When a child's actions are irrational, the teacher may respond emotionally by punishing him. Such a response shows that the teacher has forgotten that irrational behavior is a symptom of an underlying emotional problem. The effective teacher is constantly aware that aggression, nervousness, tension, flushing, trembling, irrationality, and inattention are likely to be symptoms of frustration, inadequacy, and helplessness.²²

Conclusions

THE CHILD'S experiences have a direct effect on his emotional development. Your goal as a teacher is to learn how to assist the child to use the pressures of home, school, community, and playmates in becoming a stronger individual. If you are successful, each child will emerge from his experiences a versatile, confident person who is ready to meet any new problem that arises.

Emotional adjustment has many dimensions. It cannot be gauged by a single situation. If a child is to feel competent and well adjusted in hundreds of different situations, he must first have had

²² Mary L. Starkey, "Meeting the Needs of Children," *Bases for Effective Learning*, NEA Department of Elementary School Principals—31st Yearbook (1952), pp. 215-219.

many experiences. Parents and teachers cannot bestow emotional security on the child by protecting him from the problems of the world. He can become an adult only through meeting his own problems, making his own decisions, and paying for his own errors. He learns to meet large problems with confidence and poise only by achieving success in mastering smaller problems. The function of the parent and the teacher is to stand behind the child as a friend, and at times as a counselor, but never to leap out in front of the child in order to break down the opposition or to eliminate the problems before the child himself has had a chance to develop his strength by attempting to overcome them.

Problems and projects

1. Select one fact or principle presented in the text or in the Suggested Readings and show how you can apply it to the grade level or subject-matter area in which you expect to teach.
2. Recall a person whom you liked or disliked when you first saw him. Try to explain how this reaction may have been caused by some previous experience.
3. Describe a former classmate who evidenced emotional immaturity. What were some of the possible causes? How could a teacher have helped this child to improve?

Suggested readings

- Jersild, Arthur T., "Emotional Development," Chapter 3 in Charles E. Skinner (ed.), *Educational Psychology*. New York: Prentice-Hall, Inc., 1951, pp. 52-117. (An excellent overview of the entire topic of emotional development.)
- Thompson, George G., *Child Psychology*. Boston: Houghton Mifflin Company, 1952. Chapter 8, "Developmental Trends in Emotional Behavior," pp. 288-334. (Of special interest because of its emphasis on emotional development among infants and children.)

Additional resources

- Dennis, Wayne (ed.), *Readings in Child Psychology*. New York: Prentice-Hall, Inc., 1951, Part 7, "Emotion," pp. 378-427. (Reprints and discusses six important articles on emotional development.)

- Gesell, Arnold, and Frances L. Ilg, *The Child from Five to Ten*. New York: Harper and Brothers, 1946. Chapter 13, "Emotional Expression," pp. 274-294. (Detailed description of growth in emotional expression from infancy to age ten.)
- Goodenough, Florence L., "Child Development—XIV. Emotions," in *Encyclopedia of Educational Research*. New York: The Macmillan Company, 1950, pp. 187-190. (A review of the literature on emotional development.)
- Jersild, Arthur T., "Emotional Development," Chapter 15, in Leonard Carmichael (ed.), *Manual of Child Psychology*, pp. 752-790. New York: John Wiley and Sons, 1946. (Discussion of the findings and theory of research; extensive bibliography.)
- Miller, Neal E., and John Dollard, *Social Learning and Imitation*. New Haven: Yale University Press, 1941. Chapter 4, "A Basis for Acquired Drives and Acquired Rewards," pp. 54-68. (Explanations and numerous illustrations of the manner in which emotional reactions develop.)
- Stroud, James B., *Psychology in Education*. New York: Longmans, Green and Co., Inc., 1946. Chapter 7, "Emotion and Feeling: Their Role in Behavior," pp. 211-234. (Historical treatment, biological basis, and educational implications.)

Social growth and adjustment

The individual, both as child and as adult, lives in a social world. His own welfare, and, to a large extent, his contribution to the common welfare depend on his ability to recognize and adjust to the needs of others. The professional teacher must be aware of the pressures exerted by various social groups and how they create needs. Only through a full knowledge of both the nature of the social environment and the social nature of the individual child can the teacher help the child to become a competent and happy adult.

In Chapters 2 and 3, we discussed physical development and emotional development, and looked into their implications for the classroom teacher. But no one aspect of human development exists by itself. Physical, emotional, social, intellectual, and attitudinal development are all interdependent. Although it is convenient for us to isolate these aspects for purposes of study, we must remember that they are really facets of one entity: the whole child in his environment.

The major function of the school is to prepare children for life. In our complex civilization, adequate preparation must include far more than training in reading, writing, and arithmetic. Our civilization depends on cooperation. Democracy places a premium on skill in social interaction and on the ability to utilize rather than to fight the forces inherent in the social situation. Democracy is destroyed by antisocial behavior.

Adequate preparation for life must include the development

of social competence. The individual who withdraws, who is unable to cooperate with others, or who is unskilled in acceptable social behavior is at a tremendous disadvantage. Social competence is one of the most important skills that the man or woman in business, sales, professions, politics, or public service can possess. It is important to both the skilled and the unskilled laborer. The shorter work week has made social competence increasingly important to wage-earners, since so much leisure-time activity is social in nature. A happy family unit involves much social give-and-take.

Social competence is not innate. It develops only as the individual encounters problems that make his present behavior inadequate. Beginning with the events of the first year or two of life, it develops rapidly during adolescence. The family, community, gang, church, school, and club are social groups that depend on the cooperative social behavior of their members. Each member matures in social competence as the result of the adjustments he makes to these groups.

Obviously, such an important phase of development as social competence must not be left to chance. The school must make the development of socially acceptable behavior a primary goal of the curriculum. Few parents are sufficiently skilled in "psychology" to be fully aware of the importance of good social adjustment; or, if they are, few possess the skill to plan experiences that will improve the social adjustment of their children. You, as the child's teacher, must be able to recognize problems of social adjustment when they arise and must possess the skill to assist children toward growth in social behavior.

The school has continually asked for more of the child's time each day, for more days each year, and for more years of his life. Most persons enter school at age five or six, having had only limited social experience with their age mates. Then they leave school to assume directly the responsibilities of earning a living, participating in the duties of citizenship, living with a member of the opposite sex, and, finally, raising a family. Thus, most of the social growth of the individual must take place during the school years.

Since the child does not enter the school until he is five or six

years of age, some people might assume that a knowledge of his life previous to that time would be of little value to the teacher. If we carry this mode of reasoning further, it might be assumed that the teacher in the elementary school would have little interest in the problems of the adolescent, and that the teacher in the secondary school would have little interest in the development of the child. Such conclusions would certainly be false.

Many of the experiences that make one child different from another have occurred prior to the time he enters school. If the environment of the child has led to the development of undesirable traits, we must understand the forces that are responsible so that we can set into action other forces that will modify the child's behavior in desirable directions. The high-school teacher can understand the adolescent only if he is familiar with the forces that have molded the child; the elementary-school teacher can provide adequate social guidance only if he can see ahead to the problems that the child must prepare to meet. Your success as a teacher will depend on how thoroughly you understand the forces at work throughout the entire period of the child's development from infancy to adulthood.

The pre-school years

How is human behavior modified? What determines whether it will develop in desirable or undesirable directions?

Each individual constantly strives to satisfy his needs. *He repeats those acts that have produced satisfactory results.* It would seem, then, that it should be extremely easy to control and modify infant, child, adolescent, and adult behavior. We must simply see to it that desirable acts are rewarded and that undesirable acts are punished, or at least are not rewarded. If a child has a temper tantrum, cries excessively, or in other ways does not conform to what is believed to be desirable behavior, we should try to insure that his behavior does not lead to a satisfaction of his immediate biological, psychological, or habit motives. If we can do this consistently, the child should soon abandon his undesirable behavior.

Unfortunately, it is much easier to state this rule than it is to apply it. We often find it very difficult to determine what needs the child is attempting to satisfy. Although we may respond to his undesirable behavior in a way that seems to us non-rewarding and even punishing, we may inadvertently satisfy a need of the child that we have not even suspected. Without realizing it, we may actually be rewarding him. For example, a child may have become accustomed to considerable attention from his mother and father during the period from seven o'clock until his bedtime. When, on a rare occasion, guests are entertained during this time, the child may be ignored completely for as long as 30 minutes. Adult interests and adult conversations take the center of the stage. The child feels displaced. Since a child, much more than an adult, lives in terms of the immediate situation, he feels insecure and unrecognized when he fails to receive from others the response to which he is accustomed. He feels a need to do something to protect himself from this threat to his welfare.

What he does first as he seeks to regain his place in the social group will depend upon his past experience in satisfying his needs. If necessary, he will try a succession of different acts in an attempt to restore his security and to achieve recognition. He may pull his mother's sleeve, he may hug her, he may run rapidly from one room to another, he may insist that the guest look at a favorite toy. He may pull the tail of the family cat, roll on the floor, kick someone or something, or even complain of a stomach ache. His repertoire is likely to be large and varied. Since any threat is followed by an increase in muscular tensions, his attempts are likely to involve considerable physical action. Ordinarily, the more intelligent and experienced the child, the more persistent and varied will be his striving to solve his problems. If he is successful in reinstating himself as the center of interest, his behavior will have been rewarded, even though he has received a harsh word or other punishment in the process. If rewarded, this behavior will tend to reoccur when his need for security or recognition is again blocked.

The total personality pattern of the child develops as he selects

the types of behavior that result in the satisfaction of his needs. He has the same needs for security, response from others, recognition, and new experiences that adolescents and adults have. But he is less able to plan for and place a fair value upon satisfactions that occur tomorrow or next week or next year than is an older person. The ability to appreciate the value of future satisfaction is acquired only with maturity. The child demands immediate satisfaction and reacts most deeply to frustrations that can be overcome immediately. He lacks the established habit patterns and the ability to anticipate and plan for future rewards that motivate and direct the behavior of more mature individuals.

The child begins to react to social situations at an early age. At about two months of age he begins to smile, and at seven or eight months he begins to extend his arms toward toys or toward another person. At about 18 months he begins to be interested in playing with other children, and at two years he may be ready for cooperative play. But until he is about two years old, he treats another baby or person as he would a toy, and he reacts only to such interesting features as hair, eyes, and mouth. Even at two years, the behavior of children playing together is largely individual and independent rather than social, although differences in developmental rate and pattern may be observed at an early age. Some children develop an interest in social situations much sooner than others do.

Forces within the home. The personality of the child begins to take fairly definite form during early childhood. Up to this point, the direction in which it develops is determined almost entirely by the influence of the home. The five-year-old may cry easily, avoid aggressive play, be independent, leave tasks uncompleted, show off, be cooperative, or have temper outbursts. All these traits are learnable. The behavior that becomes typical for a child is the behavior that he has found to satisfy his needs in the past. He has met and solved many important problems in his attempts to satisfy his biological and social needs.

A child's behavior is related to the problems and personalities

of his parents.¹ If his parents have shared work and play experiences with him, we may expect him to be cooperative and to get along well with other children. If his parents have been over-attentive and overprotective, we may find that he avoids aggressive play, cries easily, lacks emotional control, and lacks persistence in completing tasks. If his parents have tended to neglect him, he is likely to be a show-off, to cry easily, and to tell fanciful stories as he strives to gain recognition from others.²

The type of discipline under which a child lives has considerable effect on his personality. He may be subject to the control of many different adults or to the whims of older brothers and sisters. Behavior approved by one adult may meet with sharp disapproval from another. Behavior approved or ignored at one time may be punished by the same person at another time. The child is fortunate who lives in a home where mother and father are in close harmony with each other and are consistent in their behavior toward him. A crucial element in determining the excellence of the home is the *consistency* of adult behavior toward the child. The child is particularly unfortunate if there are constant bickering and disagreement between the parents. The atmosphere of such a home fosters insecurity, and the lack of agreement between the parents results in inconsistent attitudes toward the child.

At best, a child finds that reactions to his behavior fluctuate from day to day and from person to person. This is partly because a child is constantly exploring and trying out new things. It seems to be essential for him to determine the boundaries of his world and of his rights and privileges, and, as a part of his growing, for him to try to extend these boundaries. He may discover, for example, that both parents consistently agree that he may do certain things at any time, such as play with his toys, look out the window, sit on a chair, examine pictures, and tear up old newspapers. However, whether or not he may bang his toys on

¹ A. L. Baldwin, Joan Kalhorn, and F. H. Breese, "Patterns of Parent Behavior," *Psychological Monographs*, LVIII, No. 3 (1945), pp. 1-75.

² Berta Weiss Hattwick, "Interrelations between the Preschool Child's Behavior and Certain Factors in the Home," *Child Development*, VII (1936), pp. 220-226.

the floor, draw on the window, stand on the chair, handle the pictures, or tear up the current newspaper may depend on the newness of the toys, the sturdiness of the chair, the value of the pictures, whether or not the floor has been varnished recently, whether or not the window is freshly washed, and whether or not his parents have read the paper. Parental reaction may also depend on how his mother or father is feeling at the moment.

Thus, as the child attempts to learn the extent of his world, his greatest single problem is to determine how he may satisfy his curiosity and his desires for security, recognition, and response from others in an acceptable manner. The child who encounters wide fluctuations in the severity of punishment and in the limitations on his behavior is likely to develop severe nervous tensions, emotionalized behavior, and, eventually, acute withdrawal. Conflicting and inconsistent discipline is a greater threat to emotional and social development than is severe but consistent discipline or inadequate food, clothing, or housing.

Although many parents would hesitate to admit that their children are not at every moment a joy and a blessing, there are many times when they restrain their tempers only with considerable effort. Even the most conscientious fathers and mothers may sometimes find it wise to leave the scene of action. On occasion, they may find it difficult to remember that their child's behavior is the result of his motivation, his problems, and his past experiences, and that it is not caused by some devil that needs to be beaten away.

Ideally, the disciplinary experiences of the child should follow as the natural result of his misbehavior. A child so treated will be less dependent on adult attention, will be more sociable with other children, will be able to face his problems better, and will develop a personality that is generally more attractive to adults.³ If, however, discipline is accompanied by parental temper or by inconsistency, the child becomes dependent on adults, gets along poorly with other children, and in general develops a less attractive per-

³Mary Ellen Ayer and Robert G. Bernreuter, "A Study of the Relationship between Discipline and Personality Traits of Little Children," *Journal of Genetic Psychology*, L (1937), pp. 165-170.

sonality. Isolating the child, or frightening him when he misbehaves, or promising him specific rewards if he is a good boy also seems to delay both social and emotional maturity.

Play groups. In pre-school years, children usually play with other children who happen to live close by. They make little or no distinction on the basis of sex, color, or economic status; they simply play together when they find themselves together. There is little stability in play groups at this age; much of the play time is spent in relatively solitary and independent behavior, such as coloring pictures or playing on the playground equipment. Nevertheless, these early play groups provide an important beginning in the learning of social give-and-take and respect for the rights of others.

The nursery school. At the present time, nursery schools are available to only a relatively small number of children, but it is likely that before many years they will be accepted as a logical extension of community service. The well-planned and well-conducted nursery school has many values. It provides a competent teacher with an opportunity to recognize undesirable behavior patterns early enough to plan experiences that will help the child to reach desired goals of social behavior. The teacher, because of an impersonal but sympathetic approach, recognizes that special fears, likes and dislikes toward food, and other characteristics of the child's behavior are not inherited from mother or from Aunt Fanny, but that they are *learned* patterns of adjustment and, therefore, may be replaced by other, more desirable patterns.

Another advantage of the good nursery school is that it provides a new social situation in which undesirable adjustments can be made non-rewarding. The presence of a number of other children and a new and skilled adult, together with the child's own desire to gain approval, creates a nearly ideal environment for eliminating undesirable behavior and for encouraging social growth in desirable directions. The process of social and emotional weaning from the home is given a particularly strong start in the nursery school. As the child learns to dress himself, to care for play materials, to

eat without help, and to become a member of a group of peers, he grows toward independence and self-sufficiency.

In the many localities where no nursery school exists, parents may achieve many of its benefits by arranging simple parties or by working out an exchange plan with mothers of other children of similar age. Through this means, a child gains social experience and learns to feel secure when he is away from home and separated from his parents.

The elementary-school years

During the first six years of life, some children make greater progress than others in developing confidence, initiative, good nature, contentment, sociability, and judgment. Although the development of these characteristics, which mark the competent, considerate, emotionally stable adult, should begin early, individual differences are apparent when children enter the primary grades.

The beginning of school. For many a child, enrollment in the elementary school marks the beginning of social experience with children of his own age. He may have had little or no experience in cooperative behavior and he may not have begun to develop any sense of social self-sufficiency or independence from parental domination. Prior to this time, his world may have consisted of little more than his parents, brothers, and sisters, and a family dog or cat. The first days at school require considerable readjustment for all children. Each feels a definite loss of security and discovers that it is impossible to obtain as much adult attention and appreciation as he has been accustomed to. Fortunately, the excitement and the new experiences help to compensate for this temporary loss of security and adult attention. An important task of kindergarten and first-grade teachers is to guarantee that for each pupil the rewards of attending school more than balance the necessary losses. It is here that much of the ultimate like or dislike for school has its beginning.

The teacher is an important person in the life of the pupil,

particularly in the early elementary-school years. For a large part of the day, the teacher takes the place of the parent. Since incidents that threaten the child's security are more likely to occur at school than at home, and since the teacher is in immediate contact with the child for so many hours of the day, he becomes a representative of authority and security as well as someone who provides new experiences. In many cases, he actually has more prestige in the child's eyes than do the parents themselves. The slightest word from the teacher may make a child happy or sad, secure or fearful. His importance in the child's life cannot be taken lightly. It imposes a responsibility that has wide implications. The personality of the child who is under the charge of a wise, well-adjusted teacher will probably be altered in desirable directions. But a mal-adjusted, emotionally unstable, sarcastic, or careless teacher is likely to create emotional instability in the children under his care. In the elementary grades, which are seldom departmentalized and where the child is under the direction of a single teacher for an entire school year, the emotional adjustment of the teacher is particularly important. No political pressures or idealism about teacher tenure should make it possible for an unstable teacher to be entrusted with a group of children in the elementary grades.

During the elementary years, the child should have many social contacts in addition to those provided by the school. He should become acquainted with other children in Sunday school, scouts, a club, or a gang. As he meets and solves the problems posed by each social group, he continues to gain in social adequacy. Soon his group will show a tendency to be made up of children of his own sex but of varying ages. His activities may spread from a single block to an area of many blocks, and his friends may be of comparable size and strength, may include children larger and stronger than himself, or may be limited to younger and weaker children. His range of activity and his choice of friends reflect his feeling of security and his growth toward independence.

During this period of development, if adults permit, the child chooses his playmates with little regard for socio-economic status, intelligence, attractiveness, or even conformity. A child handi-

capped through the loss of a limb, paralysis, or a serious skin blemish may prove quite acceptable to the group during the elementary-school years. Certainly this acceptance is not necessarily due to kindness, since many children are relatively insensitive to the feelings of others. But it can be explained by lack of experience and a consequent lack of awareness that great differences do exist. It may be accounted for in part by the generally high level of security of children during these years. Pressures to conform to familiar patterns and tendencies to reject those who are different are most likely to come from individuals who are themselves insecure.

However, acceptance of the handicapped child by the group is by no means universal. If he is rejected, his lot may be extremely unhappy. Parents and teachers can foster acceptance by planning experiences in which the handicapped child can participate fully as a member of the social group.

The struggle for physical freedom. One of the earliest observable patterns of behavior in children is a struggle against any physical restriction of bodily movement. Some psychologists have called this pattern an anger reaction. As the child matures, he continues his attempts to achieve freedom from physical domination. It appears that this effort is a necessary part of his struggle for security. Consequently, adult domination is more than a social and emotional force; it constitutes a real physical threat to the child. The size and strength of his parents and, later, of his teachers are tangible problems that he must struggle to overcome or avoid. Boys make one type of adjustment to this problem when they demonstrate to their own satisfaction that they can compete with their father in wrestling or in other physical games. Both boys and girls may achieve social control over a physical threat by learning that the soft answer turneth away wrath.

During the elementary-school years, the child rapidly achieves control over a larger and larger physical area. The boundaries of his play-pen and yard are soon expanded to include several blocks and finally the entire community.

Adolescence

CERTAIN problems, particularly that of adjusting to members of the opposite sex, are first encountered in adolescence. Childhood methods that were adequate for attaining satisfaction of the basic needs for security, recognition, new experiences, and response from others now become antiquated. Complications are introduced by the new problem of achieving heterosexual adjustment. The child solves all his problems satisfactorily—only to find his adjustment threatened by the problems introduced by sexual maturity. The need to associate with members of the opposite sex—a social development made necessary by the adolescent's own physical urges and by pressures exerted by members of his own sex—may result in sudden social and emotional maladjustment.

Let us look at Jane's experience with this problem. The history of her pre-adolescent period shows that she possessed adequate or even superior social development. Now 20 years old and a sophomore in a university, Jane is beautiful, well groomed, and appears to be poised. She loves to dance and swim and is earning honors in scholarship. Nearly everyone who meets her feels that she shows every evidence of having attained a high degree of social maturity. However, for the past three or four months she has been bothered with severe headaches, has sought medical aid, and has even contemplated suicide as a possible "cure." She reveals that during dates she has a strong feeling of fear, although she does date frequently. During each date she is nervous and tense and feels that she must plan constantly to keep the party gay, witty, and occupied so that time will pass and the inevitable (in her social group) start to the country to "park" may be forestalled by a statement that it is late and time to go home. She recalls that the headaches began shortly after she and a boy to whom she was engaged had permitted their personal relations to go beyond the accepted moral limits. Her reaction to this experience has been one of extreme horror and regret. The series of headaches prevented or broke up later dates with the same boy. The unfortunate

sexual experience did not result from any strong physiological urge on her part but rather from an inability to handle the social pressures of the situation. She simply followed the path of least resistance. Her ultimate emotional maladjustment proceeded directly from immature social development.

Jane's defensiveness and fear toward any threat of physical contact with boys have kept her from a mature control of the situation. She has not developed the confidence or ability to deal with boys as friends. She is incapable of handling a situation that a socially mature girl could easily control with correct words or manner. Since her social immaturity makes an easy and well-adjusted relationship with boys impossible, they are put on the defensive when they are in her company. She finds it necessary to dominate the entire social group, and her tension spreads to them. Conflict between her parents, an overprotective mother, and lack of a brother have contributed to Jane's inability to make a mature social adjustment. Jane's problem and the emotional conflict growing from it show us how pressing is the need for guidance, instruction, and understanding as the adolescent strives to adjust to physiological maturity.

The adolescent period is peculiar to a machine-age culture, with its reduction in the number of years and hours that each person must toil. It is an artificial period created by our advanced civilization. A hundred years ago it scarcely existed. In many parts of the world, it does not exist even today. In some cultures the child changes in a short time, perhaps after some ceremonial initiation, into an adult ready for marriage and its attendant responsibilities. In these cultures, the tensions caused by a denial of the normal urges that accompany physiological maturity have little opportunity to mount.

Wisely controlled, adolescence may be a joyous period. It provides an opportunity for continued formal education. It is a holiday during which gradual growth toward adult responsibilities may take place. It provides time for experiences that live on into adulthood as happy memories. But, unfortunately, adolescence often brings frustration and maladjustment.

Social maturity. The attainment of social maturity is an important developmental goal. Growth should begin in early childhood, flourish during the elementary-school years, and be nearly completed by the end of adolescence. During childhood, the individual should have developed a feeling of security within his own social group, relying less and less on the security provided by the home and by association with adults. By the end of adolescence he should feel secure in his own ability to adjust to or to control the behavior of others. But facility in getting along with others can develop only in response to experiences in dealing with others. He cannot have learned social skills unless he has been faced with social problems.

Many children enter adolescence with a strong tendency either to dominate the social group or to withdraw from it. They must develop confidence in their social adequacy in order to free themselves of the self-consciousness that springs from constant worry about what others think of them and their actions. Social maturity includes an acceptance of individuals who belong to other nationalities, races, religions, and socio-economic groups. Intolerance springs from a sense of insecurity. An intolerant person is an immature person who fears competition or who must nurture a feeling of security by identifying himself with a chosen group. And the existence of a chosen group, of course, demands the existence of a rejected group.

Every individual strives for security and the approval of others. The socially immature individual conforms rigorously to the majority choices of his peer group in such matters as clothing, mannerisms, slang, and heroes. As a child matures, some degree of individuality becomes evident in his choices. Minor deviations may be regarded as evidences of desirable social maturation, although sudden, major deviations may be symptoms of rationalization or withdrawal from the group, indicating the presence of emotional maladjustment.

Emergence from domination. Winning freedom from parental domination is another phase of social growth that can be traced from childhood to adulthood. Here again, progress should be grad-

ual and growth should be spread over a long period of time. The need for the security provided by parents should decrease and self-security and self-sufficiency should increase. Before the adolescent can be termed adult, he must have emerged from parental supervision. He must grow from his early regard of his parents as primary love objects to an acceptance of them as trusted friends. He must cease to regard them as protectors from the dangers of the world. The young adult must be able to plan the use of his time, to make his own decisions, to choose his own friends, and to accept full responsibility for his own actions.

The adolescent is not ready to assume adult responsibility for his own behavior until he has undergone a period of training in which he gradually learns to guide his own actions. He must learn to schedule his time so that labor as well as pleasure has a place in his day. He must learn to accept responsibility for the care of his clothing. He must learn to budget his money to take care of future needs.

His choice of friends certainly will not always be wise, but his ability to make good choices is strengthened only by experiencing the results of his own good and bad choices. He will tend to choose friends who are like himself in abilities, interests, philosophy of life, and home background, but at times he will choose friends who are quite different in any or all of these traits. Immaturity may be one reason for the temporary choice of "unsuitable" friends, but desire for new experiences may also play a part. Although a young child will not persist in a friendship opposed by his parents, an adolescent may look upon such opposition as a threat to his struggle for freedom from home domination.

The most the parent can safely do to guide these choices into desirable channels and to lessen the likelihood of serious danger is to furnish every possible opportunity for the adolescent to bring his friends into his own home, especially those friends who for one reason or another seem undesirable. The adolescent is most likely to detect real deficiencies in his friends when he sees them against the background of his own home. The physical presence of his home gives him a feeling of stability and confidence, and

the rules of conduct that he has been accustomed to observe within his home will act as determinants of the conduct of both himself and his guest.

Factors that retard social development. Obviously, social development can take place only through social interaction. But mere physical presence in a group does not guarantee that a child will react freely as a member of the group. His participation may be blocked by sociological, emotional, or physical factors.

Think of the plight of a child marooned on an island, isolated from all contact with other children, unable to develop the skills on which social acceptance depends. And yet this child's social isolation is not much greater than that of the child who is rejected by his fellows because of the color of his skin, or the religion, moral code, occupation, or income of his parents, or the size and location of his home. Social isolation may create a barrier to social development that is just as real as the barrier created by physical isolation.

Another factor that retards social development is slow physiological maturation. The child who is slow to mature physically is usually slow to develop social interests appropriate to his age level. As a result, he may be rejected by his age group. For example, a child who has been well accepted by his age mates prior to adolescence may later lose his contact with them because of his slow physical maturation. The consequent stunting of his social development may make it impossible for him to re-establish contact with his peers even after he attains physical maturity.

Certain emotional factors also isolate the child from free interaction with his peers and create a barrier to social development. Overprotection by his family or vivid warnings concerning the danger of climbing, throwing, and scuffling may prevent him from accepting the group even though the group might be willing to accept him.

In fact, anything that serves to limit social acceptance even temporarily may do permanent harm by creating social immaturity.

Factors that further social development. There are many forces within the home environment that affect the child's rate and direction of social development. The child may develop social skill

through dealing with older or younger brothers or sisters. In addition, if he has a brother or sister of about the same age, the child has an opportunity to develop social confidence through dealing with members of the opposite sex who are friends of his brother or sister. Necessary social skills such as dancing are learned more naturally and easily from a brother or sister than from some other member of the opposite sex. And the presence of a sibling of the opposite sex makes it easier for a child to understand and to accept the physiological differences between the sexes.

The family that participates as a group in church and other community activities or that makes it a practice to entertain other families in the home offers its children many opportunities for the development of social skills. Thus, any factor that results in opportunity for social experiences in a relatively secure setting tends to promote social development and to prepare the adolescent for meeting new social problems.

Techniques for appraising social development

THE EXTENT to which an individual is accepted by his group can be determined by several reasonably objective methods. You can use the two that are discussed here to make an early appraisal of the social structure of your classroom. Devices used to study social structure commonly are called "sociometric tests."

The Moreno technique. This technique is used to determine the degree to which each child is accepted by his classmates.⁴ The methods for gathering information may vary, but the general pattern is somewhat as follows: Some time after the first month of school, each child is asked to write the names of the three classmates he would choose for each of three situations:⁵

I would like best to work with these children:

I would like best to play with these children:

I would like best to have these children sit near me:

⁴ J. L. Moreno, *Who Shall Survive?*, rev. ed. Beacon, N. Y.: Beacon House, Inc., 1953, pp. 92-95.

⁵ Willard C. Olson, *Child Development*. Boston: D. C. Heath, 1949, p. 196

Although the teacher may wish to make an analysis of the types of situations for which each child is chosen, a total "social-acceptability" score is sufficient for most purposes. In general, the specific situation seems to make little difference. The three choices are intended to broaden the scope of the replies rather than to indicate real differences in patterns of acceptability.

To obtain the individual scores, a count is made of the total number of times each child is chosen by the other children. Or sometimes the teacher may want to examine the mutual choices that have been made. Although it is important to know that a child has been chosen by others, a knowledge of whether or not he has been chosen by those whom he himself chooses adds considerably to our understanding of his adjustment to the group.

Some teachers believe that they have no need to gather information concerning social acceptability, since they feel that they know quite well the status of each individual in the group. But Moreno's findings indicate that this is not usually true. He asked teachers from kindergarten through seventh grade to predict which children would be chosen by their fellows most frequently and which would be chosen least frequently in a sociometric survey. He found that kindergarten teachers were correct on 65 per cent of their predictions, but that the accuracy of the teacher prediction decreased in each succeeding grade. The seventh-grade teachers were correct only 25 per cent of the time.

*The "Guess-Who" technique.*⁶ The purpose of the "guess-who" technique is somewhat similar to that of the Moreno, but the approach is, perhaps, less direct. The "guess-who" test attempts to identify those individuals in a group who their associates think have a reputation most nearly like the description contained in a short, fairly general paragraph.⁷ Although the paragraphs are designed for specific age groups, they refer to generalized types and should not be slanted toward specific individuals.

⁶ Caroline M. Tryon, *Evaluations of Adolescent Personality by Adolescents*, Monographs of the Society for Research in Child Development, IV, No. 4. Washington, D. C.: National Research Council, 1939.

⁷ Walter Loban, "A Study of Social Sensitivity (Sympathy) among Adolescents," *Journal of Educational Psychology*, XLIV (1953), pp. 102-112.

The teacher or leader reads paragraphs such as the following:

"This person has a fine sense of humor, is the life of the party and is lots of fun." Guess Who?

"This person is a leader both on and off the playground." Guess Who?

The method for analyzing and applying the results is similar to that for the Moreno technique. The "guess-who" technique appears to be somewhat more dangerous than the Moreno in the hands of an unskilled person. Obviously, either technique could do a great deal of harm if handled carelessly.

General information contributed by sociometric techniques. Sociometric devices give us general information about personality characteristics that are liked or disliked by others. This knowledge is extremely valuable in helping teachers and parents to guide the development of the child.

Here are some general conclusions based on studies of accepted and rejected children:

1. Children who have low social-acceptability scores are likely to be described by teachers as chronically ill, sulky, conduct problems, bossy, new to the school, or shy.

2. Children with high social-acceptability scores are likely to be described by teachers as good-natured, well adjusted, friendly, quiet, and dependable.

3. Classrooms made up of children from a wide range of socioeconomic backgrounds tend to have a large number of children with very low social-acceptability scores.

4. A child-centered classroom, in which the emphasis is on group interaction and cooperation, tends to result in a lessening of the number of children with very low social-acceptability scores.

How you can influence group acceptance. As a skillful teacher, you will find a knowledge of the social structure of the group as valuable as a knowledge of the abilities and interests of individuals within the group. If you are to make the best use of social motives to energize and direct learning, you must know all you can about the social structure of the group with which you

are working. In addition, you will want to use your information to improve the structure of the group by making the isolated members more acceptable.⁸ Although you must be careful in this attempt, success is not beyond the skill of a competent teacher. And certainly children who are isolated because they are new to the group, or shy, or because they are of a different race, nationality, or religion need to be helped toward social acceptance.

A few years ago the author observed a fifth-grade teacher's skillful handling of a boy who had just moved to a midwestern town from South America. The boy could easily have been received with indifference or even with cruelty. On the first day of school, the teacher and pupils welcomed him to class. Key members of the group became responsible for coaching him in playground games, teaching him the school songs, introducing him to the traffic officer at his crossing, and guiding him through the school building. Since his success in games and songs was also a success for his coaches, a number of students became concerned with his welfare. Here we see a fundamental force at work that serves to direct the interests of one person toward another. We feel pleased with ourselves and our self-esteem is raised when we are allowed to do a favor or when we profit from the success of another. This pleasant feeling ordinarily is accompanied by a liking for the person whom we befriend.

Individual differences in social development

WHEN we study the development of any aspect of behavior, we are interested in at least two types of data. We want to know the average status of development at each age level for the two sexes and for various other natural groupings. This provides us with reference points so that we can determine whether the individual child with whom we are dealing is at, above, or below the estab-

⁸J. D. Roberts, "Improving the Status of Isolates," *Bases for Effective Learning* NEA Department of Elementary School Principals—31st Yearbook (1952), pp. 183-188.

lished norm. However, knowledge of norms and measures of central tendency are often not enough. We need to know the extent to which an individual child deviates from the norm. For this reason, as we study human development, much of our effort is spent in determining the extent of individual differences in the various areas.

In the area of social development, we are particularly interested in the factors related to development of leadership, individual differences in ability to lead, and socio-economic status.

Development of leadership. Aptitude and ability for leadership pay big dividends. Leaders have a tremendous influence—for good or bad—on our social organizations, whether in politics, education, philosophy, or merely in the extracurricular activities of the school. How are leaders different from non-leaders in personality traits? What is the rôle of the school in developing leaders?

Here are some of the traits in which adolescent leaders as a group differ from non-leaders.⁹ In general, the leaders are superior in intelligence, physical size, and health. They appear to be more interested in others and seem better able to understand others. They are somewhat more extroverted and dominating in their social relationships. Leadership appears to be a fairly persistent trait. Leaders in elementary school are very likely to be leaders in high school, college, and the community.¹⁰

Although the school will wish to give every student an opportunity to lead and to develop skill in leading, we cannot make leadership an ultimate goal of social development. For greatest social effectiveness, our leaders must also be potentially efficient cooperators or at least followers. A cooperative society cannot use many individuals who must lead on all occasions. The primary goal of social development is not to learn to dominate so much as to possess high skill in cooperative behavior. Our schools must produce individuals who are able and willing to accept leadership

* Leslie Day Zeleny, "Leadership," in *Encyclopedia of Educational Research*. New York: The Macmillan Company, 1950, pp. 662-668.

¹⁰ Mary E. Courtenay, "Persistence of Leadership," *School Review*, XLVI (1938), pp. 97-107.

when leadership is needed but who are also able and willing to contribute their maximum effort as members of the team. Thus, at its highest level, social development requires a flexibility of behavior. We cannot judge social competence on the basis of a single trait or in a single situation. We seek to develop adults who are able to accept their appropriate rôles in a wide variety of social (and nonsocial) situations.

As the group as a whole moves from one task or activity to another, leadership passes from one person to another within the leader-group. One person tends to take the lead in sports, for example, and another comes to the fore in scholastic activities.

If we were to assign a group of 50 persons to a task to be done on a cooperative basis, one person would probably emerge as the leader. If this person were removed from the group, another leader would emerge. If the group were gradually reduced to only two members, one of the two would assume leadership in cooperative activities. It may be that the well-known leaders of history have emerged because of the magnitude of a common problem faced by the group to which they belonged, rather than because of the qualities of leadership that they obviously possessed. According to this point of view, such great movements as the emancipation of the Negro, the development of our natural resources, and the recognition of democratic rights came about not because certain great men were on hand, but rather because they were made great by the specific needs and opportunities of the time in which they lived.

These observations are made, not to detract from the value we ascribe to leadership, but rather to emphasize the dynamic forces inherent in the social group.

Why do the members of a social group accept leadership? Probably because of the psychological rewards that it bestows on them:

1. The security of the individual is enhanced when he identifies himself with a group. There is safety in numbers; if the group action is wrong, the individual need not suffer in isolation. He feels strong because of his association with a group. He feels that the force possessed by the group is irresistible. Once he has be-

come a member of the group, he finds it difficult to break away, because conformity is rewarded by group approval and nonconformity is punished by rejection.

2. The individual satisfies a desire for recognition by identifying himself with a group. If the leader of the group is well known and has high status, the individual's self-esteem is bolstered through identification with him. The follower feels entitled to some of the credit for the accomplishments of the leader and of the group.

3. We are all guilty of a certain amount of social inertia. It is easier to follow a leader, to let someone else assume responsibility, than it is to lead or to assume responsibility ourselves. We are particularly willing to follow when we see that the group has an aim which, if attained, will help us fulfill our individual needs. Conformity saves time and energy. Almost everyone has formed a habit of group action. Group games are a part of our culture. We have learned to clap our hands, to cheer, to sing, and to boo in unison. Social groups—the family, the church, the school, and the community—are an important part of our cultural heritage.

We have seen some of the ways in which leaders differ from non-leaders and we have defined our goals of leadership development. But some questions remain. What is the typical pattern of leadership development? What experiences can we plan that will foster it? What are some of the factors that impede it?

We can set up certain psychological principles that determine whether or not an individual will assume leadership and be accepted as a leader: First, there must be a goal that is attainable through group action. There are many possible satisfactions for the individual in a team game, a group hike, a class project, or a social organization—such as gaining new experiences, winning the esteem of those within or outside the group, and improving self-esteem through identification with others in the group or through successful group competition. Second, the leader must be recognized as someone who is willing and able to help the individual members of the group to attain their goals.

Classroom or playground situations that give a child confidence

and competence help him to develop his potentialities for leadership. Physical strength, size, and agility, intelligence sufficient to see desirable goals and to find means for attaining them, and social confidence stemming from broad play experiences during the pre-school years make the child ready to assume leadership in the activities of the elementary-school grades. Ordinarily, such a child will then gain still more leadership experience during his elementary-school years and will carry both leadership status and additional competence into his adolescent groups.

Since individual differences in leadership experience and status tend to increase as children become older, leadership training must be started as early as possible in the school. The child who lacks the assurance that comes with experience in leadership must be given leadership opportunities in the primary grades. We must recognize that leaders vary with the situation. Physical traits, daring, and the desire to excel are most essential for leadership on the playground. Leadership in scouting involves many trainable skills. Leadership in a class project may go from child to child, depending somewhat on their special hobbies and experiences. Our curriculum can easily be made flexible enough for the child who needs leadership experience to find himself in a group whose work involves his special interest in photography, stamps, rocks, insects, or drawing, or requires his special skill with tools. His special interest, talents, or skills will make him a logical leader in such a group. To some extent at least, the taste for leadership must and can be cultivated.

Thus, we see that leaders are allowed to lead because they help a group to reach its goals. Leaders develop skill in leading because of their natural abilities and their opportunities for experience. Any factors that prevent a child from gaining early experience in leading or that prevent him from making normal or superior physical, mental, and social growth block him from opportunities to lead.

There is an additional dividend to be won from giving larger numbers of children experience in leadership: We give experience in *following* to the children who have done little but lead. As we know, the highest level of social behavior requires skill in both rôles.

Socio-economic status. More and more, we can see how important to the total educative process is the informal learning that takes place within student groups. One of the most important aspects of the learning situation, formal or informal, is that it is a *social* situation. It is not enough for a child simply to be a physical member of a group. He must be accepted as an equal if he is to profit fully from the social situation.

The direction that social development takes is determined by the examples and pressures of the groups that are most important to the individual concerned. The family and the neighborhood are usually the most powerful of these groups.

Since in our country there are vast cultural differences in the standards, beliefs, attitudes, customs, and levels of aspiration among specific families and neighborhoods, vast differences exist both in the direction and the extent of social development. Some of the effects of these cultural differences on the life of the individual are discussed in other portions of this book, notably in the chapters on "The Nature and Development of Intelligence" and "The Psychological Basis of Behavior Problems." However, we shall note here some of the relationships between home background and success in social participation, particularly in school activities.

We can gain information about some of the factors that govern social acceptance by examining the relationship between participation in extracurricular activities and the socio-economic status of the home. One method of estimating socio-economic status is to obtain information about such items as family income, education of parents, type of furniture, car used by the family, residential area in which the home is located, and the number of books, magazines, telephones, and bathrooms in the home. Socio-economic status may be estimated by means of a visit to the home or by asking a parent or an older child to answer a series of questions. One of the most frequently used lists of questions for children of junior-high-school age or older is the Sims Score Card.¹¹ Points are allotted for the various indications of social or eco-

¹¹ Verner M. Sims, *The Measurement of Socio-Economic Status*. Bloomington, Illinois: The Public School Publishing Company, 1928.

nomie status. A high score indicates a home of high socio-economic status.

Some of the data obtained from one study of the relationship between participation in extracurricular activities and certain other factors for students of a large senior high school in Iowa (1,700 pupils) are given in Table 1. Although the Hi-Y and Student Club

TABLE 1* *Per cent of the total membership of various groups found in each socio-economic category*

<i>Socio-Economic Score (Sims)</i>	<i>Per Cent of Entire School</i>	<i>Fraternity Sorority</i>	<i>Hi-Y</i>	<i>Student Club</i>
33-34	.40	5.33	3.70	1.20
31-32	.57	5.33	.00	.60
29-30	2.51	21.33	5.56	4.79
27-28	3.77	20.00	9.26	10.18
25-26	4.74	9.33	12.98	13.17
23-24	9.19	18.67	22.22	13.77
21-22	8.85	12.00	20.37	11.88
19-20	12.73	5.33	12.98	18.77
17-18	15.25	2.66	3.70	10.18
15-16	11.82	.00	5.58	7.78
13-14	11.88	.00	.00	4.19
11-12	7.42	.00	3.70	4.19
9-10	5.94	.00	.00	.60
7-8	2.91	.00	.00	.60
5-6	1.48	.00	.00	.60
3-4	.46	.00	.00	.60

* Henry P. Smith, "A Study in the Selective Character of American Secondary Education: Participation in School Activities as Conditioned by Socio-Economic Status and Other Factors," *Journal of Educational Psychology*, XXXVI (1945), p. 238.

were not so highly selective as the fraternities and sororities, the students of the lower socio-economic levels were not making or were not allowed to make full use of these opportunities for social interaction. In the case of the fraternities and sororities, 92 per cent of the membership was found to be drawn from the upper 30 per cent of the school population, and 100 per cent of the membership was drawn from the upper 53 per cent.

We know from our own observation that, whatever the cause,

social interaction among children of various economic classes is restricted in the school, the place where these children are most likely to be in physical proximity. Not that there is necessarily any deliberate exclusion of the children from less-favored homes. The reasons for lack of participation in school activities are many. Extra money and extra time are often necessary. During the high-school years particularly, children from the lower-income homes need to work after school. Or they may feel embarrassed because they lack suitable clothing and thus do not seek the companionship of more fortunate children.

Few if any schools are completely successful in adjusting the curriculum to each child's ability and cultural background. As a group, children from the lower socio-economic levels encounter more failure experiences in the classroom than do children from the upper socio-economic groups. Thus children from the lower groups are most likely to develop a general distaste for anything associated with the school. Levels of aspiration, too, are influenced by the cultural level of the home. The unskilled laborer's child is less likely to have life goals that demand success in all aspects of the school program than is the professional man's child.¹²

The effect of socio-economic status extends beyond the mere creation of barriers within the extracurricular activities of the school. It can be detected in the results of children's answers on tests designed to measure social, emotional, and home adjustment and degree of extroversion.^{13, 14, 15}

An attempt has been made to correlate the personality test scores discussed above and the socio-economic scores obtained by using

¹² A. N. Hieronymus, "A Study of Social Class Motivation: Relationships between Anxiety for Education and Certain Socio-Economic and Intellectual Variables," *Journal of Educational Psychology*, XLII (1951), pp. 193-205.

¹³ H. M. Bell, *The Adjustment Inventory, Student Form*. Stanford, California: The Stanford University Press, 1934.

¹⁴ By extroversion is meant the tendency of the individual to be the center of the social situation and to seek social contact. Its opposite, introversion, refers to a tendency to withdraw from social contact.

¹⁵ Ross Stagner and Joseph Pessin, "Diagnostic Value of Introversion-Extraversion Items," *American Journal of Psychology*, XLVI (1934), pp. 321-324.

the Sims Score Card. Table 2 shows the degree of relationship found. Although all the correlations except those between social adjustment and socio-economic status are low, all are in the same direction. There appears to be a measurable tendency for children from homes of higher economic level to be somewhat superior in general adjustment and somewhat more extroverted than children from homes of average or below-average economic level.

TABLE 2° *Correlation between socio-economic scores and scores on tests of adjustment and extroversion*

	<i>Emotional Adjustment</i>	<i>Home Adjustment</i>	<i>Social Adjustment</i>	<i>Extro- version</i>
<i>Boys</i> (N 812)	.09	.12	.40	.19
<i>Girls</i> (N 939)	.13	.14	.35	.09
<i>Total</i> (N 1751)	.12	.14	.37	.13

* Adapted from Henry P. Smith, "A Study in the Selective Character of American Secondary Education: Participation in School Activities as Conditioned by Socio-Economic Status and Other Factors," *Journal of Educational Psychology*, XXXVI (1945), pp. 229-246.

In the case of social adjustment, the relationship is especially high. As a group, high-school students who come from high-income homes have developed relatively mature social competence and interests as compared with students from low-income homes. This same situation almost certainly occurs among elementary-school children.

The responsibility of the school

THE TEACHERS and the school have a clear responsibility for aiding the child to develop social competence and confidence.¹⁶ Extra-

¹⁶ Howard S. Bretsch, "Social Skills and Activities of Socially Accepted and Unaccepted Adolescents," *Journal of Educational Psychology*, XLIII (1952), pp. 449-458.

curricular groups offer one of the best possible opportunities for children to experience social contacts and thus to develop ability in the social give-and-take so essential to happiness and competence in later life. It appears, however, that extracurricular groups are not doing a perfect job of developing social competence. Most of the children who participate in them have already made acceptable social growth and many of those who do not participate are most in need of development. One method for improving this situation is to incorporate the activities into the school day and thus to make them co-curricular rather than extracurricular. More students would then be encouraged to participate, since the student who has a tendency to withdraw finds it easier to enter an activity in his own or a neighboring room than when he is offered the choice of either participating or going home. In addition, when several activities take place at the same time of day, the opportunities for leadership are increased. The students who would normally dominate all the activities are forced to choose among them.

If all the students are to participate in the process of learning, the teacher must learn to draw the reticent student into class discussions. Social learnings as well as subject-matter learnings depend on active participation. The teacher must exercise the same skill in directing extracurricular activities. This does not mean that he should dominate the activities under his sponsorship, but it does mean that he should encourage a wide base of active student social participation, responsibility, and leadership.

The school can extend its contributions to social developments through fuller use of the school plant. At present, the community too often finds it necessary to provide separate buildings and playgrounds for the use of school-age children during the evenings, weekends, and summer vacations. In large cities, boy-proof fences are often built around the school playground even though this may be the only play space available except for streets, sidewalks, and alleys. Too few schools encourage children to use the classrooms, gymnasiums, showers, dressing rooms, equipment, and playgrounds at times other than Monday through Friday, eight-thirty to four or five, fall to spring.

In some communities, the school becomes a center for social life both for children and for family groups. When parents and teachers join their efforts to those of the children to raise funds for playground equipment, to produce a community play, or to hold a last-day-of-school dinner, or when parents and teachers sing together or discuss mutual problems at parent-teachers meetings, the values extend far beyond the immediate pleasures or achievements of the activity. The citizens of the community become better acquainted with one another and with the teachers. Teachers become much better acquainted with the child by knowing his parents. A child is much more likely to like school if his parents become enthusiastic about what the modern school can offer him. Prejudices and social barriers between children often develop for little reason other than a lack of understanding between their parents. It seems desirable that the idea of relaxation and pleasure become associated with the school as well as that the school be regarded as a place to do a task well.

The emphasis here upon your professional need for a knowledge of social development is not an idea that is being foisted on the community by the progressive educator. Rather, the community demands training in social competence for its children. The function of education has always been to prepare the child for life. Only a generation or two ago, social skills were not a critical portion of life needs. Speedy transportation and communication, more leisure time, mass instead of individual production, and the transition from a rural to an urban America have changed the picture. For most persons today, social skill is a vitally important vocational as well as avocational need. In this area, education merely strives to catch up with the demands of society.

Problems and projects

1. Choose a principle or some facts from the present chapter and show how you might apply this information in your own teaching.
2. List three incidents from your own life experience that did most to give you a feeling of social adequacy. Three others that

harmed your feeling of social adequacy. In how many of these did a teacher play a major rôle?

3. Try to recall a classmate from your elementary or high-school days who was retarded in social development. Can you suggest methods by which the teacher could or did help to promote his social development?

4. Criticize or defend the statement that the highest level of social development is characterized by flexibility of behavior rather than by leadership.

Suggested readings

Kuhlen, Raymond G., *The Psychology of Adolescent Development*, New York: Harper and Brothers, 1952. Chapter 4, "The American Culture and Adolescent Personality," pp. 148-189. (Emphasis upon cultural determinants of behavior; rural vs. urban, socio-economic status, race, sex, and education.)

Powers, Francis F., "Social Growth and Character Formation," Chapter 4 in Charles E. Skinner (ed.), *Educational Psychology*, 3rd ed. New York: Prentice-Hall, Inc., 1951, pp. 118-151. (An excellent overview of social development, character, and the acceptance of one's rôle in life as aspects of social behavior.)

Additional resources

Havighurst, Robert J., and Hilda Taba, *Adolescent Character and Personality*. New York: John Wiley and Sons, 1949. (An intensive study of the structure of social classes in a midwestern community of about 10,000 persons.)

Hollingshead, August B., *Elmtown's Youth*. New York: John Wiley and Sons, 1949. (A report of the relationships between the behavior patterns of adolescents in a midwestern community and the positions occupied by their families in the community structure.)

Jennings, Helen H., *Sociometry in Group Relations: A Work Guide for Teachers*. Washington, D. C.: American Council on Education, 1948. (Gives forms, tabulations, and suggestions for a study of social structure.)

Olson, Willard G., *Child Development*. Boston: D. C. Heath and Co., 1949. Chapter 8, "The Human Relations of the Classroom," pp. 192-213; and Chapter 9, "The Child in the Home and the Community," pp. 214-252. (Emphasis on forces in the life of the child.)

"Research on Human Relations and Programs of Action," *Review of Educational Research*, XXIII, No. 4 (1953), pp. 285-385. (This entire issue is devoted to reviewing research in group interaction—extensive bibliographies following each article.)

Rohrer, John H., and Muzafer Sherif, *Social Psychology at the Crossroads*. New York: Harper and Brothers, 1951. Chapter 17, "A Preliminary Experimental Study of Inter-Group Relations," pp. 388-424. (An experiment on the evolution of status and leadership in a group of boys at camp.)

Warner, W. Lloyd, and Paul S. Lunt, *The Status System of a Modern Community*. New Haven: Yale University Press, 1942. (One of six volumes in a series dealing with social structure in a New England community of about 20,000 population—"Yankee City.")

*The development of attitudes,
ideals, and beliefs*

A major goal of education is that each child will develop socially desirable and personally satisfying attitudes, ideals, and beliefs. The teacher must understand how the interacting social forces of the home, the community, and the school influence the child in this development. The teacher must have clear-cut objectives as he tries to determine the attitudes, ideals, and beliefs that should be nourished. He must know how to build learning situations that will direct the child's behavior toward these objectives.

In this chapter, as in the three preceding ones, we shall deal with just one facet of the child's development. Since all phases of his development are interdependent, undesirable deviations in any one aspect—physical, emotional, social, intellectual, or attitudinal—will threaten successful growth in every other area.

Let's define our terms

WE USE the words attitude, belief, ideal, opinion, character, and prejudice in our ordinary day-to-day conversation. They represent concepts that are important to us. Granted, we use these words in a somewhat inexact fashion, but for most purposes that is enough. However, as teachers these terms become a part of our professional vocabulary. We use them to transmit and to receive important information concerning children. For this reason, we must establish meanings that are as exact as possible. And, as we study that phase

of the child's development that we call attitudes, beliefs, and ideals, an accurate knowledge of the terms that are used helps us to see the tremendous breadth of our professional interest in this topic.

Attitudes, opinions, and prejudices. Attitudes are acquired dispositions toward groups of persons and toward social, religious, or political beliefs and institutions. Our attitudes prompt us to act; they keep us in a more or less enduring state of readiness for action. They dispose us to favor or to oppose our own actions and the actions of others. We have attitudes toward just about everything: political and social issues, religious beliefs and religious groups, other nations and other races. We have attitudes toward churches, schools, organized labor, war, social security, marriage, and our family. We even have attitudes toward words. For example, plutocrat or prosperous citizen, socialized medicine or government protection of health, indoctrinate or educate—the exact word or phrase used does much to determine our opinion on certain issues.

As we can see, attitudes are important determinants of behavior. Although opinions are closely related to attitudes, ordinarily we use the word opinion to describe our position on a specific issue. We are of the opinion that our city should build a new school, that John Doe should be elected governor, or that our nation should give pensions to the blind. Obviously, our attitudes toward education, toward Doe's political party, and toward government responsibility for the needy have a lot to do with our opinions. Prejudices, too, are closely related to attitudes. If we have an unfavorable attitude toward a group, we are likely to pre-judge individual members of that group. We assume that they have many undesirable characteristics and we close our mind to their desirable traits. If we have an unfavorable attitude toward a political party or a political philosophy, we are likely to pre-judge any candidate or any issue espoused by that party or related in any way to that political philosophy. Thus our attitudes dispose us to see individuals and relatively isolated issues as either all good or all bad. At their worst, our attitudes tend to keep us from looking for evidence; at their best, they give stability and consistency to our behavior.

The emotions—which we studied in Chapter 3—are also closely related to attitudes. Attitudes may develop from our fear or love of a person or a group, and emotions such as fear and anger can be aroused if a political party, a religion, or a group of persons toward which we have a highly favorable attitude is threatened.

Ideals and standards of behavior. Although ideals also are related to attitudes, the term refers directly to our personal standards. As we seek to satisfy our needs, we judge our conduct by these standards. When we discuss ideals, we use such terms as honesty, courage, charity, ethics, chastity, loyalty, fairness, kindness, and truthfulness. We recognize that most people adopt moral and social standards that are neither absolutely perfect nor imperfect in terms of these ideals. Personal standards usually are somewhere between one extreme and the other. Few of us are absolutely kind, charitable, and truthful in all possible situations. The result is a tremendous complexity of individual variations in moral and social standards. //

There is considerable interdependence between attitudes and ideals. In our relations with persons who belong to groups toward which we have a favorable attitude, we are likely to hold to our highest standards of behavior. And we are likely to develop unfavorable attitudes toward groups that have ideals significantly different from our own. In addition, though we use the term ideals to designate points of reference for our personal standards for judging our own behavior, we often use the term attitude to refer to our opinions concerning such ideals as honesty, truthfulness, religion, morality, and charity.

Taken all together, our attitudes and ideals have a lot to do with the way we behave from day to day. Our attitudes are particularly important when we deal with others, because their reactions to us are determined in large part by our acceptance or rejection of them and their ideals. Close friends and members of the same family seldom differ greatly in attitudes and ideals.

Beliefs. Beliefs are important determinants of both attitudes and ideals. We believe in democracy, in liberty and justice, in a Su-

preme Being, in the brotherhood of man, and in the value of education.

Though ordinarily there is a close relationship between our attitudes, our ideals, and our beliefs, usually we can find inconsistencies if we stop to search a bit. We have ideals of honesty and fair-dealing and we believe in justice for all, but our attitudes toward certain groups may lead us into opinions and even acts that conflict with these ideals and beliefs.

Character and philosophy of life. Our attitudes, ideals, and beliefs, and the degree to which our conduct harmonizes with them, determine our character. Thus we must have fine intentions in order to have a fine character, but character is determined by our actions rather than by our intentions.

The concept, "philosophy of life," is closely related to character. It is difficult to see how one can have a fine character without a fine philosophy. But in our usage of these terms, character involves a judgment by the social group and philosophy of life refers more directly to the individual's personal goals, ideals, attitudes, and beliefs. However, when we make a quality judgment of another person's philosophy (when we say that it is "good" or "bad"), we use the same point of view that we use when we judge character; we observe his actions.

Our satisfaction with ourself also is closely related to our philosophy. We have a feeling of self-esteem when we are able to satisfy our needs in a manner that does not conflict with our philosophy of life.

Propaganda vs. education. In the sense that we ordinarily use it, the term propaganda refers to information designed to change opinions, attitudes, ideals, or beliefs in a direction determined by the propagandizer. Ordinarily, that is its only goal. We think of propaganda as being in the interests of the person or group that propagandizes. On the other hand, when the word education is used in connection with modifying opinions, attitudes, beliefs, and ideals, it refers to a search for truth—an examination of all pertinent data, an attempt to see both sides of any question. When we think of edu-

cation, the point of reference is not the teacher or the community so much as the child. We feel he has a right to know.

To be effective, propaganda also must employ truth and facts, but it is a selection of such truth and facts as favor but one side of a question. And, frequently, truth and facts are employed as a smokescreen to cover the falsehood also contained in the propaganda.

So much for our definition of terms and our examination of the scope of this problem in which we have such a strong professional interest. But before we search for ways to influence the child's behavior, we must see if we can agree upon some objectives for our work.

Objectives of character development

MODIFICATION or change is not an appropriate goal in itself. We must have reasons for changing, and to have reasons we must have objectives. We must not attempt to modify the child's behavior until we know in what *direction* it should be modified. However, as long as they are stated in general terms, most of the objectives toward which we educate are easily agreed upon. Everyone agrees that children should learn to read, to write, to compute, and to speak effectively. What about other aspects of behavior—character, for example? Can we agree on what attitudes, ideals, and beliefs contribute most to the welfare of both society and the child?

As long as we limit ourselves to broad objectives, such agreement is possible. In fact, we have already suggested some general goals. To identify each in minute detail would be quite another matter. But that is true also for the specific objectives of reading, writing, and speaking. Thus, the setting of broad objectives for the development of character is as far as we shall attempt to go.

Actually, there are numerous objectives for character development that are agreed upon in our society. Some of these are recog-

nized in common law and by our Constitution. And although there is no one religion that everyone subscribes to, nearly all religions agree on broad beliefs and ideals.

Let's make a list of some objectives upon which we all agree in theory, if not in actual practice. This should give us a basis for judging the desirability of both attitudes and actual overt behavior. If you wish, you can add other objectives or you can place the objectives listed here in different categories. In fact, you should continue to clarify and define your objectives as long as you continue to teach.

1. We believe that we should treat others as we ourselves wish to be treated. Nearly everyone agrees that this "Golden Rule" should be a general objective. But what are some of its corollaries? Honesty, fair dealing, courtesy, truthfulness, and observation of property rights are implied. And any prejudices that are directed against other persons are in conflict with this objective. More specifically, it requires that we drive safely, use care if we handle food that others are to eat, take precautions against spreading disease, help the old and the needy, and protect and help children.

2. We believe that we have a responsibility toward the social and political institutions to which we belong. Thus, we are obliged to carry out the duties of a citizen—vote as intelligently as possible, accept office or perform jury duty, pay taxes, and train our children to become good citizens.

3. We believe that we have a responsibility to ourselves—that we must be physically and morally clean, practice good health habits, and save for our future needs.

But human behavior seldom is perfect. Few of us are able to maintain even a day-to-day and person-to-person consistency in those attitudes and standards of behavior that are corollaries of these general objectives. This need not keep us from stating our general goals as absolutes. Obviously, the behavior of children in our classes will vary from near zero to well below perfection as judged by perfect standards. However, so long as we appraise each

child's growth in relation to his background and opportunities, no harm should result from our having high goals.

Some professional needs

WE NEED to learn how to nurture the child's desirable behavior and to weed out his undesirable behavior. We know that there is no pat formula for doing this. Our success in guiding behavior will depend on our knowledge of the child's present behavior and understandings, his ability to adjust to new situations, his needs, and the character of the forces that affect his life.

First, we need to learn how to appraise each child's present attitudes, ideals, and standards of behavior. What clues do psychologists look for as they study attitudes and ideals? Can we use any of these clues to find out about the attitudes and ideals of the children with whom we work?

Second, we need to know how attitudes, ideals, and beliefs are developed. We know that they are learned, but how? What are the important determinants? How are attitudes, ideals, and beliefs related to age, socio-economic status, cultural group, occupation, and sex?

Third, how can character be improved? What can a teacher do? And, since we know that our students will differ from one another in attitudes and standards of behavior, what adjustments must we make in our teaching procedures?

We cannot expect to satisfy all these professional needs in one chapter, or in a dozen books, or in twenty years of teaching experience, but we can hope to find some information that will help us.

By examining a few studies, we can find how psychologists gain information concerning attitudes and ideals. And we can learn something of the variations that we can expect to find among our students. At least as important, we can gain some understanding of the factors that determine the character of the child. The opinions of experts who have spent years studying the problem provide us with valuable information.

How attitudes and ideals are studied

AS WE WORK with children, we constantly need to know their present status. For when we try to find out what we can do to help them establish desirable attitudes and ideals, we must start where they are and help them to grow at a maximum rate.

How can we find out what the child's attitudes are? We could ask him directly what he thinks about honesty, truthfulness, or the Chinese. But, unless we are much more specific, we cannot hope for much valid information from him. A somewhat better approach is to get his opinions about numerous specific situations that involve honesty, truthfulness, or the Chinese. His statements on whether or not he would like to play with or sit near a child of a certain race, religion, or nationality, whether he would ask the child to his home, would accept him as a friend, or would help him if he were in trouble, and his opinions on what should be done in situations involving honesty or truthfulness tell us a great deal about his basic attitudes.

Another method is to observe his behavior when he is on the playground or in social groups outside the school. We can observe his choices of friends and his honesty and truthfulness in sports, in doing his homework, and in the classroom. Such observations can tell us a great deal about many different facets of the child's development; we can gain clues to his prejudices as well as to his preferences.

Let's choose a specific attitude and see how a psychologist might study it. First, he needs to measure the general location or at least the direction of the attitude—whether it is favorable or unfavorable and how far it lies in either direction. The most common method for doing this is to prepare a list of different possible opinions concerning a specific group or belief. The psychologist then asks persons whose attitudes he wishes to study to say whether they agree or disagree with these statements.¹ For example, if he

¹ Raymond G. Kuhlen, *The Psychology of Adolescent Development*. New York: Harper and Brothers, 1952, pp. 400-403. (Gives technical information concerning how attitude scales are made.)

wants to measure the attitude of high-school students toward the French people, he may include the following opinions: the French are intelligent, the French are dirty, the French are cruel, the French are trustworthy, the French are cooperative, the French are eager for war, the French are artistic, and the like. Then, he may ask a number of high-school students to check the statements with which they agree. By analyzing the items they check, he can estimate their attitudes toward the French at least within the limits of the statements that he has used. If he obtains a representative sample by choosing students from many schools, from rural and urban areas, of different foreign backgrounds, and from all economic levels, he has a fair indication of the opinions of high-school students concerning the French. By following this same procedure with persons of various ages, religions, political parties, and educational levels, he can find how closely these factors are related to attitudes toward the French.

Now let's assume that he wants to know more than the direction of the attitudes. He wants to know how easily he can change them. In other words, he wants to study the effect of "propaganda." He may show the students a film that presents the French as cowardly, dirty, and cruel, or a film that shows them as happy, intelligent, brave, and friendly. Or he may assign readings, or display posters, or arrange to have a French student visit the class. In any case, he will then ask the students to check his list of opinions again. By comparing their opinions before and after, he can estimate the amount of change in attitude that his "propaganda" has produced. Ordinarily in such studies he is able to check only on the average attitude of a group. If he were to have students sign their names to their statements, their desire to conform to his attitude or to the attitude of other students might invalidate the findings.

Obviously there are many weaknesses in this use of opinions as a clue to attitudes. Although opinions are greatly influenced by underlying attitudes, they are not so directly affected by the emotions as are the attitudes that they are based upon. Suppose that an individual is antagonistic toward the French. His antagonism may have developed from an unpleasant experience with a single

Frenchman or from generalized statements made by his parents. In the non-emotionalized atmosphere of the classroom, he may agree that the French are intelligent, artistic, and the like, yet this may not indicate at all how he will react if he finds himself competing with a Frenchman for the same job or the same girl.

There is another serious weakness in this method of studying attitudes. Although the direction of attitudes is reasonably easy to measure, their intensity is much more difficult to appraise. And from an educational standpoint, intensity is far more important than direction. We may hold an opinion that is based on little or no information and it may have no emotionalized connotations for us (unless, of course, someone challenges it in such a way as to threaten our security). A little information may lead to an easy and quick change of such an opinion. However, if our opinion is based on considerable information, whether the information is correct or incorrect, our opinion will be much more difficult to change. There is a third possibility: Our opinion may be based on considerable information plus a strongly emotionalized attitude. In this case, it will be particularly difficult to modify either the opinion or the underlying attitude.

So we must be cautious in interpreting our studies of attitudes. Ordinarily, they measure only a person's verbal reaction toward certain things. He may be perfectly honest and believe sincerely that, if he were actually confronted with a certain situation, his behavior would be what he predicts it will be. Yet many of our attitudes are so emotionally toned that when we are faced with a concrete situation we react quite differently from the way we have predicted. Why? Because under emotional stress we react more strongly and with less regard for the facts than when we are calmly and intellectually appraising a problem. Under emotional stress, our ideals and beliefs exert less control over our actions.

However, since verbal expressions do give us some indication of actual attitudes, they are worthy of study. And we have another reason for being interested in what the individual says his opinion or attitude is. Such responses are likely to represent his reasoned

reaction to a situation; they represent what he thinks is the right thing to do. In spite of the emotionalized tone of his underlying attitude, he may be able to control his overt behavior if it conflicts with his reasoned judgment of what is right or wrong. We hope that he will be able to do so when he encounters such a situation, and we know that if he can, a later situation of the same type will arouse less conflict between his reason and his feeling.

As we can see, the study of attitudes and ideals is not an easy task. Even when we try to describe an attitude, we find that the words we use convey different meanings to different persons. Often we hear and believe only what we want to. For example, when we question a child about his attitude, his answers are influenced by how he reacts to us; and our interpretation of his answers is influenced in turn by our attitudes toward him and toward the subject being discussed. Even so, many valuable studies of attitudes have been made. Let's look at some of them. Since we are particularly interested in what factors in the child's background are determinants of his attitudes, the studies are grouped under factors that psychologists have found to be related to attitudes.

Factors related to specific attitudes and ideals

ATTITUDES and ideals depend somewhat on age, education, socio-economic status, occupation, and sex. Let us see what effect these factors have on the development of specific attitudes.

Age or school grade. As you have probably noticed, people tend to become more conservative in political and economic matters as they grow older, particularly after about age 25. The reason may be that they have begun to develop a feeling of security based on the status quo. They have gained property and skills that would be jeopardized by violent political or economic changes.

However, we are interested primarily in the attitudes of school-age children. What is the nature of their changes in attitude as they grow older? What changes have been observed in their attitudes

toward truth, toward property rights, toward religious beliefs, toward what is right and what is wrong, and toward other races and nationalities?

A study² of the answers of children from grades five through 12 to the question: "Are there cases in which lies are necessary?" gives us some information. Eighty per cent of fifth-graders replied that lies are not justified. Of these about three-fourths gave "practical reasons" for their answer (lies don't get you anywhere—you are found out later) and one-fourth gave moral reasons (it is wrong to lie). At grade 12, however, only one-half of the group replied that lies were not justified. Of these, about three-fifths gave practical reasons and about two-fifths gave moral reasons. The percentage of those who felt that lies were sometimes justified had increased from about 20 per cent at the fifth grade to about 50 per cent by the twelfth grade. A study of changes in religious beliefs during about the same age periods is also of interest. Selected statements from such a study are shown in Table 1.

TABLE 1 *Age differences in religious beliefs**

Statements	Percentage of Children Who Checked Various Statements								
	Believe			Not Believe			Wonder About		
	Age			Age			Age		
	12	15	18	12	15	18	12	15	18
I know there is a God	91	80	79	3	5	2	2	14	16
Every word in the Bible is true	79	51	34	6	16	23	15	31	43
Prayers are a source of help in time of trouble	74	80	83	11	8	7	15	10	9
Catholics, Jews, and Protestants are equally good	67	79	86	9	9	7	24	11	7

* Adapted from Raymond G. Kuhlen and Martha Arnold, "Age Differences in Religious Beliefs and Problems During Adolescence," *Journal of Genetic Psychology*, LXV (1944), p. 292.

² B. E. Tudor-Hart, "Are There Cases in Which Lies Are Necessary?" *Journal of Genetic Psychology*, XXXIII (1920), pp. 586-641.

A study³ of attitudes toward property covers a somewhat longer age span. Each of 836 boys, grades one through 12, was asked to evaluate various possible acts against the property of others. The younger boys tended to judge the seriousness of the offence on the basis of fear of punishment, the older boys more often mentioned an unwillingness to injure others.

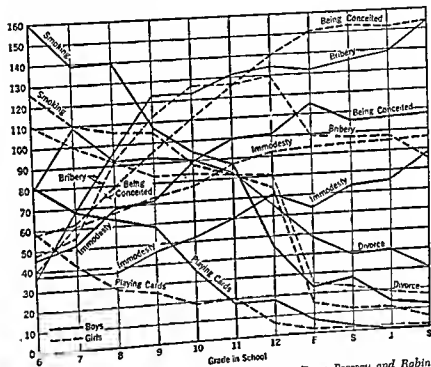


FIG. 1. Changes with age in things thought wrong. From Pressey and Robinson, *op. cit.*, p. 286.

Figure 1 gives us an especially interesting picture of the relation of age to conceptions of right and wrong.⁴

A study of attitudes toward persons of other races was made with

⁴J. C. Eberhart, "Attitudes toward Property: A Genetic Study by the Paired Comparisons Rating of Offenses," *Journal of Genetic Psychology*, LX (1942), pp. 3-35.

³Sidney L. Pressey and Francis P. Robinson, *Psychology and the New Education*. New York: Harper and Brothers, 1944, p. 286.

more than 1,000 students in grades seven to 12 in several towns in Iowa.⁵ An analysis was made of the responses of the children to a series of questions concerning their personal reactions to hypothetical situations in which Negroes, Japanese, Mexicans, Filipinos, and others were portrayed as eating in restaurants, stopping at hotels, and buying homes in predominantly white areas. The results indicate that in their reactions to such situations the students became less tolerant as they entered adolescence. Other studies also have indicated that adolescents tend to be intolerant of persons who are unlike themselves. The intolerance of the adolescent may result from the general lack of security that we know is characteristic of the early portion of the adolescent period. We shall see more evidence later that insecurity is a basic cause of aggression against persons and property.

In another study,⁶ students from grades four through 11 in a southern school were asked to compare whites and Negroes on 60 characteristics. The results indicated that the younger children in the school had generally unfavorable opinions of Negroes; they were unwilling to admit that Negroes had any good traits. Older children conceded that Negroes had some good traits. For example, children in grades four and five believed that white persons were more religious, more cheerful, less selfish, and had a better sense of humor, more fondness for music, and a better sense of rhythm than Negroes. But the children in grades 10 and 11 rated the Negroes superior in all these traits.

This study gives us a clue to the manner in which many of our attitudes have their beginning, and it shows to some extent at least how attitudes develop. Parental attitudes, favorable or unfavorable, toward a race, nationality, religion, or even a political party tend to be accepted uncritically by the child. All members of the group toward which the attitudes refer, and all their traits, are assumed to be good or bad. With increasing experience and matu-

⁵ Ralph D. Minard, "Race Attitudes of Iowa Children," *University of Iowa Studies*, IV (1931), pp. 1-101.

⁶ Robert Blake and Wayne Dennis, "The Development of Stereotypes Concerning the Negro," *Journal of Abnormal and Social Psychology*, XXXVIII (1943), pp. 525-531.

rity, the child learns that there are individual differences between members of the group and he becomes able to attribute traits with some discrimination.

You may wonder why this study does not show a regression in tolerance at the beginning of adolescence. There are at least two possible reasons. Most important, perhaps, the situations studied here were not posed as threats. Each pupil was asked merely which of two groups of people was more cheerful, religious, and the like. Also the adolescents were not separated from pre-adolescents. For example, though more tenth-graders than ninth-graders will have reached puberty, in each grade we find both stages of physical development.

Educational levels. Logically, information should be a primary factor in the formation of attitudes. Increased education and experience should lead us to rely less on prejudice and more on a direct appraisal of the essential factors in each new situation. To a degree, they do. For example, a study of the attitude of parents toward how much freedom children should have indicates that more highly educated parents tend to be somewhat more consistent in their decisions and more sympathetic to the problems of children.⁷ And persons who have not had experience in dealing with children recommend considerably sterner treatment than do experienced parents.

It does appear that level of education is closely related to attitudes toward sexual behavior. In one study,⁸ three groups of adult males were questioned: those who had left school by the eighth grade or before; those who had left school at some time between the ninth and twelfth grades; and those with 13 or more years of schooling. Between the ages of 16 and 25, masturbation and petting to a climax had been from two to three times more frequent among those with 13 or more years of schooling than among those with

⁷ Helen L. Koch, Mame Dentler, Bonnie Dysart, and Helen Streit, "A Scale for Measuring Attitude toward the Question of Children's Freedom," *Child Development*, V (1934), pp. 253-266.

⁸ Alfred C. Kinsey, Wardell B. Pomeroy, and Clyde E. Martin, *Sexual Behavior in the Human Male*. Philadelphia: W. B. Saunders Company, 1948, pp. 337-359.

eight years or less of schooling. However, in the lower educational group premarital intercourse had been about seven times as frequent, premarital intercourse with prostitutes about nine times as frequent, and extramarital intercourse about eleven times as frequent. Although about 61 per cent of those in the upper educational group stated that they objected to premarital intercourse on moral grounds, only 21 per cent of those in the lower group did so.

Socio-economic status or occupation. As we might expect, many differences in attitude are related to the social and financial standing of the family in the community. In the lower socio-economic groups, for example, parents and their children appear to be in much closer agreement in their attitudes toward such things as church, war, and communism than they are in the higher socio-economic groups.⁹ One reason may be that the children in the higher socio-economic groups read more widely, travel more, and enjoy richer community experiences.

Adolescents from the upper socio-economic classes differ considerably from adolescents in the lower socio-economic classes in their reputation among their peers for honesty, friendliness, responsibility and loyalty.¹⁰ This may, however, be a stereotype resulting from the status of their parents. Nearly all members of the upper group received excellent ratings but in the lower groups the range was from very high to very low.

There is considerable evidence that general attitudes toward social and political issues are related to occupational levels. According to one study,¹¹ members of the upper occupational groups (managerial and professional), with few exceptions, are conservative, whereas in the lower occupational groups (skilled workers, semi-skilled workers, and unskilled workers) about one-fourth can be classed as conservative, one-third as indeterminate or borderline, and somewhat more than one-third as radical. The semi-

⁹ Theodore Newcomb and George Svehla, "Intra-Family Relationships in Attitude," *Sociometry*, I (1937), pp. 180-205.

¹⁰ Robert J. Havighurst and Hilda Taba, *Adolescent Character and Personality*. New York: John Wiley and Sons, Inc., 1949, pp. 49-50.

¹¹ Richard Centers, *The Psychology of Social Classes*. Princeton: Princeton University Press, 1949, p. 57.

skilled workers showed a considerably greater tendency to be radical than did the unskilled workers, and the white-collar workers were much more conservative than the skilled laborers.

In a study¹² of 11,000 children from ages eight to 16, it was found that cheating was highly related to socio-economic status, to family, and to peer group. These children were tested and observed for cheating during athletic contests, at parties, in the classroom, and while doing their homework. From 70 to 100 per cent of the children in the lowest socio-economic groups resorted to cheating, but less than 20 per cent of those in the highest group did so. This study did not, obviously, depend upon the child's statements concerning his behavior.

Although the studies mentioned here were concerned only with attitudes toward certain ideals of behavior and toward social and political issues, they indicate some relationships between attitudes and socio-economic status or occupation. Among other things, they appear to indicate that children from the lower socio-economic level homes have special pressures. We know that standards of behavior are likely to vary with the pressures under which an individual lives. It appears likely that these pressures would be greatest in a traditional, autocratic school and least in a progressive, democratically conducted classroom.

Sex differences. We know that in our culture there is something of a "double standard" concerning the moral behavior of boys and girls. And there are cultural differences in what we expect in the way of sympathy, kindness, and the like. Can these cultural differences be detected through a study of the attitudes of boys and girls toward moral or religious questions?

One study¹³ did find that at age 16 approximately 38 per cent of the boys and 26 per cent of the girls drank intoxicating beverages to some extent, while at age 24 the figures were 75 per cent for the men and 53 per cent for the women. In addition to the

¹² Hugh Hartshorne and Mark A. May, *Studies in the Nature of Character: I—Studies in Deceit*. New York: The Macmillan Company, 1928.

¹³ A. C. Rosander, "Age and Sex Patterns of Social Attitudes," *Journal of Educational Psychology*, XXX (1939), pp. 431-496.

information that this study gives concerning sex differences in attitude, it is interesting because it used a somewhat different approach from that of most of the studies we have reviewed. It is a report of how people said they had behaved rather than a statement of their opinions concerning a problem.

A study of the relation of sex to the attitudes of university students was made during the period 1937 to 1941, with 300 men and 300 women as subjects.¹⁴ Some general conclusions of the study were that women tended to be more religious and pacifistic, believed less in capital punishment, and had greater respect for law. The women also were more definitely opposed to communism than were the men.

Apparently sex is not a tremendously important determinant of attitude. Perhaps we should not expect to find large differences. When we study the effect of school grade, education, occupation, and socio-economic status, we have factors that bolster each other.¹⁵ These four forces cannot be easily separated in a study of attitude. For example, differences in school grade or education include differences in parental occupation and socio-economic status. With approximately the same proportions of boys and girls at each educational and occupational level, such sex differences as are found should be due only to the effect of differences in our culturally determined standards and expectations.

Although we have classified our studies under four factors that have been found to be related to the direction of attitude, we know that we cannot assume that relationship implies cause and effect. Thus a study of the relationship of educational level and attitude or ideal does not demonstrate conclusively that educational level was a cause. The educational level that an individual attains is highly related to his intelligence. The educational levels of children and their parents also are highly related. Occupation

¹⁴ Leonard W. Ferguson, "Analysis of Sex Temperaments in Terms of Thurstone-Type Attitude Items," *Journal of Genetic Psychology*, LXVI (1945), pp. 233-238.

¹⁵ Margie R. Lee, "Background Factors Related to Sex Information and Attitudes," *Journal of Educational Psychology*, XLIII (1952), pp. 467-485.

of parent, socio-economic status, and even the section of the city in which children live are related to each other and to educational level. Any of these factors may have been more closely related to attitude than was educational level. It simply happened that the person making the study chose educational level rather than occupational level or some other factor. Actually, in the case of some of these factors, an attitude conceivably could be the cause and the educational level or the occupation could be the result.

So much for the studies of some of the important determinants of attitude. Hundreds of such studies have been made. Our primary purpose in examining a few of them has been to see how attitudes can be measured and to observe the direction of the relationship between certain of these determinants and a few selected attitudes.

Now let us look at what we can do about it. What does this knowledge of some of the determinants of attitude mean to us? How can we make use of such information in the classroom?

Propaganda and attitudes

EARLIER IN THE CHAPTER we mentioned that the psychologist is interested in the effect of propaganda on the development of attitudes. Now that we know more about attitudes in general, let's look more closely at some methods for modifying them.

One series of studies¹⁰ attempted to measure the effect of motion pictures on the attitudes of children of high-school age. We shall discuss one of these studies in some detail and indicate the general results of the others. In 1930, 133 children in grades seven to 12 in a midwestern town were asked to fill out questionnaires designed to measure their attitude toward the German people. Another scale was used to determine their attitude toward war. About two weeks later, the motion picture "Four Sons" was shown to the group. This was a story about a German family's sacrifices during World War I. The next day, the children's attitudes were

¹⁰ Ruth C. Peterson and L. L. Thurstone, *Motion Pictures and the Social Attitudes of Children*. New York: The Macmillan Company, 1933.

measured again. There appeared to be a significant shift toward friendliness for the German people and a slight shift toward pacifism. Through showing films to other age groups, it was demonstrated that students through college level could be made lenient toward criminals, opposed to gambling, friendly toward the Chinese, and opposed to war. The purpose of these experiments was to determine the effect of motion pictures on attitudes and to enable teachers to get some idea of what methods are most effective in modifying attitudes.

One further study¹⁷ illustrates the effect of propaganda on attitudes. Articles designed to modify opinions on foreign policy were read to university students in sociology classes. Four sets of materials were used. Two favored isolationism; the other two favored international cooperation. Two sets, one favoring each side of the issue, were based on logical argument; the other two sets were based on emotionalized appeals. The results indicated that the articles based on appeal to reason were less effective in modifying attitudes than those that suggested a threat to the listener's security and prestige.

The effect of clever propaganda upon even a relatively mature group has been demonstrated rather vividly.¹⁸ During the early days of World War II, 34 members of an American college class in applied psychology took a test designed to measure attitude toward Nazism. They then spent about two weeks of regular class sessions studying German war-time propaganda and hearing lectures that used this same material as examples of the propaganda techniques that are used in war time. Then they took the same attitude test again. Since it appeared likely that the American attitude in general would become more anti-Nazi during wartime, a control group of 75 students was given the same two tests. The control group did not study the propaganda or listen to the lec-

¹⁷ Selden C. Menefee and Audrey G. Granneberg, "Propaganda and Opinions on Foreign Policy," *Journal of Social Psychology*, XI (1940), pp. 393-404.

¹⁸ R. M. Collier, "The Effect of Propaganda upon Attitudes Following a Critical Examination of the Propaganda Itself," *Journal of Social Psychology*, XX (1944), pp. 3-17.

tures. However, on the final test it was found that the group that studied the propaganda had become less anti-Nazi and that the control group had become more anti-Nazi.

Studies of efforts that have been made to change attitudes of students lead us to two conclusions. First, regular classroom instruction does not produce significant changes. The attitudes of seniors, for example, do not differ greatly from those of freshmen in the same high school. Second, instruction that is aimed directly at creating change is very effective. For example, even one reading of an article that presented a strong stand in favor of capital punishment resulted in a significant increase in the number of high-school students who stated that they favored this method of punishment.¹⁹

Everyone whose job is to inform or to influence—teachers, preachers, statesmen, lawyers, politicians, advertisers, salesmen, and editorial writers—is vitally interested in the modification of attitudes. As teachers, we are most interested in those changes in attitude that are the primary responsibility of the school. And we are most interested in education rather than in propaganda. That there is a difference will be apparent as we examine how attitudes are modified among children in our classrooms.

The psychological basis of attitudes

ALTHOUGH we have studied factors that are related to attitudes, we recognized that those factors were not basic causes. But, since attitudes and ideals are acquired, we shall want to know why and where they are acquired. As we search for an answer to this problem, we must remember that the same laws of learning and motivation apply to all types of learned behavior. Thus we are most likely to develop those attitudes and ideals that bring us security, self-esteem, and the esteem of others.

¹⁹ Richard M. Bateman and H. H. Remmers, "The Relationship of Pupil Attitudes Toward Social Topics Before and After Studying the Subjects," *Studies in Higher Education*, XXXVII, No. 4 (1936), Purdue University, pp. 27-42.

Obviously, we acquire our attitudes from many different sources. Some we accept ready-made from those who have authority over us. The child soon comes to be aware of the likes and dislikes of his parents. He recognizes the levels of honesty, fairness, courage, and truthfulness that they expect of him. He learns through personal experiences that it is wise to follow his parents' admonitions against touching hot objects, the whirling blades of an electric fan, or the wires on an electric toaster. He finds also that he must conform to many of his parents' less understandable wishes. If he destroys a book, is rude to guests, strikes his playmate, or kicks his sister, he may experience physical punishment or strong disapproval. He may even find that the same type of action, when directed against strangers or persons of a race, religion, or socio-economic group that is different from his, are approved by his parents.

These experiences serve to teach him that his feeling of security is at a maximum when he displays the attitudes and ideals that are most pleasing to his parents. As we can see, the child learns his attitudes and ideals from examples and by experimenting and observing the praise or reproof that results. In fact, he learns his attitudes in the same way that he learns his fears and his general social behavior.

We all know that the attitudes of parents directly affect the development of attitudes in the child. A study²⁹ of the individual opinions of members of 207 family units (one or more high-school children, mother, and father) has led to these generalizations concerning attitudes:

There is a very high relationship (correlation of .80 to .87) between the attitudes of parents and the attitudes of their high-school-age children, but mothers and fathers tend to agree with each other in attitudes even more closely than they do with their children. And high-school-age children of the same family tend

²⁹ Naomi Weltman and H. H. Remmers, "Pupils', Parents', and Teachers' Attitudes—Similarities and Differences," *Studies in Higher Education, Series IX*, No. 56 (1946), Purdue University, pp. 13-18.

to agree with each other more closely than they do with their parents.

This close agreement in attitudes among the members of a family unit is apparently created by their sharing, in addition to a common home environment, many other common environments, such as the school, the church, and other neighborhood groups.

Many of our attitudes result from the human tendency to generalize. We like or dislike certain names, odors, colors, tastes, or sounds because we associate them with some previous pleasant or unpleasant experience. Perhaps we do not like the name of Richard. When we meet a person with that name, we find that for some reason or other he does not appeal to us. If we search our memory for other Richards we have known, we may remember someone with whom we once had an unpleasant experience. Perhaps it was the bully who made our younger days a nightmare, or an associate who at one time caused us extreme embarrassment, or merely some person who was dirty or domineering. Even if we fail to uncover such an association, it may still be lurking deep in our memory. Many of our most unpleasant memories are too painful to remember easily, and seem conveniently to have been forgotten. If an experience has been accompanied by a threat to our security, recognition, esteem in the eyes of others, or has caused us physical pain, a new situation, similar in some detail to that unpleasant situation, is likely to seem unpleasant to us. And, just as unpleasant experiences lead to unfavorable attitudes, pleasant experiences lead to favorable attitudes. Pleasant childhood experiences—our home, our parents, the woods or stream where we played, the names of persons, odors, colors, or even the feel of the air—live on in the attitudes we hold toward these things all through our lives.

We generalize our experience into attitudes in many other ways. If our experience with our mother has been pleasant and satisfying, we may build up a love for motherhood in the abstract. If we have an unpleasant association with one Englishman, we may dislike all Englishmen. If our security has been threatened by many different individuals, we may withdraw from mankind in general,

or we may acquire a predisposition to fear or hate anyone we chance to meet.

Many of the important attitudes of the child are well developed before he enters school. He has learned them from his parents, from other members of his family, and from his friends. His pleasant and his unpleasant experiences have had a strong influence on this development, and he has generalized his attitudes to objects or persons that have some of the attributes of the originals. Many of his attitudes will be desirable; these we shall want to see grow and spread even more widely. Others will be undesirable; these we shall want to modify.

We can see as we study the psychological basis of attitudes that they are energized in large part by the individual's needs for security and the esteem of others. In early childhood, his attitudes conform to those of his parents; in adolescence, he seeks security and esteem in conformity to his peer group.

Prejudices that grow out of negative attitudes illustrate in still another way how attitudes are related to the psychological needs of these individuals. To a large extent, intolerance results from seeking security within a group. To have an identifiable in-group, there must be an out-group made up of persons who differ in some way—real or imagined—from members of the in-group.

If the members of the in-group suffer extreme frustration from any cause, they are likely to vent their pent-up frustration in aggressive action toward an out-group. This process is known as "scapegoating." History contains numerous instances of minority groups that have suffered in this fashion. Ordinarily, the individual scapegoat or the group of scapegoats is different in some way from the in-group.²¹ It may be a matter of clothing, nationality, religion, family occupation or financial status, mannerisms, accent, or even extremely high or extremely low intelligence. Scapegoats of course must be accessible to the in-group and unable to retaliate. In addition, they tend to become established as scapegoats. They are

²¹ Gordon W. Allport, *The Nature of Prejudice*. Cambridge: Addison-Wesley Publishing Company, Inc., 1954, pp. 243-259.

likely to have been scapegoats before for the same or a different group and for the same or a different excuse.

Development of a philosophy of life

THE INDIVIDUAL'S general system of attitudes toward religion, morality, ethical problems, goals of life, and codes of conduct make up what we call his philosophy of life. It is the responsibility of the home, the school, and the community to help each child develop a consistent and adequate philosophy of life. The background for this philosophy is sketched in during the early years, and reflects the influence of parents and childhood friends. Then, during the elementary grades the general picture becomes fairly clear. When the child begins to encounter the special problems of adolescence, the details and subtleties of his philosophy are brushed in at a rapid rate. By the end of adolescence, his philosophy should be so well delineated that he no longer has to debate with himself about how he will react to important problems. Whether the adolescent girl goes riding in the handsome stranger's new car, whether the boy spends most of his spare time in the corner poolroom, whether the boy or girl, and later the adult, attends church, reads wisely—in short, how the individual responds to every social and moral problem—is determined by the quality of the philosophy he has developed.

A consistent set of attitudes gives meaning to life. The adolescent is constantly confronted with new situations and problems that challenge the attitudes he has previously found adequate. So we can expect him to be seriously concerned about revising his attitudes into a consistent, adult philosophy. During childhood he has been willing to live by his parents' standards of behavior. He has even been willing to reject his childhood friends when they did not receive the full approval of his parents. Occasionally, of course, he has experimented tentatively and has been led by curiosity to investigate standards of behavior different from those

approved by his parents. But not until adolescence does he feel a strong need to emancipate himself from the domination of his parents. At that time he is impelled to challenge and examine the adult-formulated rules and regulations that he has previously accepted. Many, perhaps most, of these principles of conduct he will retain, but only after he has examined them for himself, has discussed them with his peers, and, perhaps, has experimented with them in familiar situations.

When to go to bed, how much time to spend studying, how to handle money, whether or not to work, what personal friends to choose, what is right and what is wrong—these issues the adolescent must learn to decide for himself. If every bedtime, every nickel spent, every hour of work or play, every question of right or wrong were to be decided by the desires of the moment, the adolescent and later the adult would show great day-to-day fluctuations in behavior and would be subject to erratic emotional tensions. But an integrated, adequate philosophy of life eliminates many of the causes of these emotional tensions because it keeps, close at hand, satisfactory answers to the sudden, unanticipated problems of day-to-day life.

What the school can do about attitudes and ideals

THE DEVELOPMENT of healthy attitudes, beliefs, and ideals is tremendously important both to the individual and to those about him. The very existence of the nation, the school, the church, and the family, as defined in our culture, depends upon the attitudes our citizens learn toward these institutions. And we have crime, delinquency, divorce, prejudice, and hatred because of learned attitudes.

Schools exist for the purpose of teaching young people what our culture finds acceptable. Belief in democracy, in religion, in the value of the home, in the importance of property rights, in equal opportunity, in fair dealing, and in the worth of our fellow men is as vital to our culture as are reading, writing, arithmetic, and

history. Naturally, then, the school must try to equip the child with desirable attitudes and ideals.

Sometimes the attitudes and ideals of the primary groups, such as the family, are in harmony with those of the larger groups, such as the community, the state, and the nation. Then the school's task is fairly easy. It needs only to be efficient to insure that the child will enter adult life well trained both in subject matter and in acceptable social attitudes. But sometimes the attitudes of the home or the neighborhood conflict with those of the larger group in which the child must eventually find his place. This is the field upon which the school meets its real challenge. If the child's parents have low moral and ethical standards, if they fail to teach cooperation and respect for family life, or if they entangle the child in prejudice, the school's task becomes extremely difficult. And this task of planting desirable attitudes where undesirable attitudes are already flourishing falls to you, as the child's teacher.

Your opportunities as a teacher. The teacher has a great deal of prestige in the eyes of the child, particularly during the elementary-school years. Your attitudes toward family life, religion, government, race, fair play, honesty, hard work, and emotional control serve as models for the child's own attitudes, whether you want them to or not. If you make the best use of your prestige, your influence will be healthful and far-reaching. Your impact will be particularly strong on the child who, because he has failed to find security at home or in his peer group, must seek it elsewhere. Since one way for an insecure child to win security is by revising and redirecting his attitudes, your work with him will give you one of your greatest chances to make a valuable contribution.

Children have the same desire for self-esteem and the esteem of others that adults have. But, unlike adults, children have not yet been able to find suitable substitutes for goals they cannot reach; they have not learned to accept a level of status lower than the top level. We try hard to see that each child has opportunities to succeed in the regular academic work and in the social groups of the school. For if he does not succeed in the school, he must search elsewhere for success.

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students. Drama, literature, and music are found to be effective media for transmitting moral and social values, and learning seems most effective when class spirit and group loyalty are present.

As you gain experience in trying to develop desirable attitudes, you will discover that once an individual takes a position on a question and is challenged to defend it, his self-esteem comes to depend on his ability to defend it successfully. His attitude, bolstered by his own arguments, becomes solidly formed and, consequently, much more difficult to modify. Your attempts to modify it are likely to fail if you put the individual on the defensive, especially if he has been forced to defend it in front of others. He will feel that their esteem, as well as his own self-esteem, would be threatened if he were to change his position. Heated arguments seldom result in a change of viewpoint. Aggressive partisans often do their side more harm than good. If we are to succeed in modifying the attitudes of others, we must suggest that we are in basic agreement with them. Only when we appeal to, rather than threaten, their fundamental needs are they free to evaluate information in a favorable light.

In the preceding pages we have discovered many ways in which the child's attitudes may be changed. Our purpose as teachers is to encourage the development of attitudes that will help the child take his place as a valuable citizen in the adult world.

We have all seen how effective the schools under dictatorships have been in developing loyalty to a social philosophy opposed to the rights of the individual. Surely it should be an easier task to encourage children to embrace a philosophy based on the rights of the individual. We must assist children in their choice of heroes. We must emphasize the contributions of the scientist, the inventor, the teacher, the executive, the statesman, the craftsman, the skilled laborer, the farmer, and the engineer. We must help the child to evaluate individuals and issues on the basis of their merits rather than on the basis of his prejudices. We must foster respect for democratic government and loyalty toward our social institutions.

Certain general ideals and beliefs are clearly prescribed by our laws and by our philosophy of democratic government. Respect

for law and order, cooperation, regard for the rights of the individual, peaceable settlement of disputes, the value of knowledge, the nobility of labor, freedom of religious choice, and the responsibilities of citizenship are at the core of our social philosophy. It is our responsibility as teachers to encourage children to develop specific attitudes that are in accord with these general principles. These principles are determined by the people as a whole. The school is responsible for educating children to conform to them. As a citizen, the individual teacher shares responsibility for determining society's ideals and beliefs. But once they have been determined, our worth as teachers depends upon how skillfully we can encourage children to accept these principles and modify their personal behavior so as to conform to them. In our democracy there is no place for prejudice, lawlessness, disregard for the rights of individuals, settling of disputes by physical force, refusal to do a share of the work of the group, or failure to delegate and accept responsibility.

We can now begin to see more clearly the nature of our problem of guiding the child toward behavior that is socially and individually rewarding. As teachers, we have the right and the responsibility for influencing the attitudes of the child in socially acceptable directions. This does not mean, however, that we have the right to try to influence his religious beliefs. His family and his church should retain the privilege of such influence. It is not our purpose to indoctrinate or propagandize.

We have, then, as teachers two primary tasks as we attempt to improve attitudes and standards of behavior. First, we help the child to broaden his understanding of his beliefs and ideals. To do this, we must help him acquire concrete meanings for his beliefs and ideals. For example, what can justice mean in the behavior of others toward him and what does it mean when he deals with his peers and with those weaker than himself? What does honesty mean as applied to taking examinations and handling money? What does fairness mean when he plays a game or is a member of a social group? What are courteous acts and what is their value? And, second, we encourage the child to adopt behavior that is

the child to grow toward the highest level of social behavior—cooperation. We can lead him to evaluate other persons as potential friends rather than as potential enemies. We can teach him to look for strong rather than weak points as he appraises his fellows.

4. By bolstering the child's security, we eliminate his need for negative attitudes and prejudices, since these have insecurity as their primary cause. Scapegoats are needed only by the insecure.

5. By giving the child a wealth of social experiences, both inside and outside the classroom and with both age mates and adults, we teach him to understand different kinds of people. We like and trust those we know. We dislike and fear the unknown. The child *must meet people and study people if he is to develop trust and understanding of people.*

Here, as in the case of the objectives that we sought to identify, you may be able to discover important principles that have been omitted. As you can see, you will continue to search for objectives toward which the child's behavior should be guided and for principles underlying the guidance of behavior as long as you continue to teach.

Problems and projects

1. List three or four of your own attitudes or prejudices that conflict with specific ideals or beliefs that you subscribe to. Suggest how this conflict arose in your own development of attitudes.

2. Trace the development of a prejudice that you once held. What was its status at ages 5, 10, and 15? List incidents or persons that were significant in its development.

Suggested readings

- Kuhlen, Raymond G., *The Psychology of Adolescent Development*. New York: Harper and Brothers, 1932. Chapter 9, "Adolescent Ideology: Attitudes, Character and Morals, Life Philosophy," pp. 399-460. (Discusses the measurements of attitudes, and factors related to attitudes.)
- Thompson, George G., *Child Psychology*. Boston: Houghton Mifflin Company, 1952. Chapter 13, "The Development of Personal and

Social Values," pp. 552-589. (Discusses how children acquire ideals, attitudes, and appreciations. Studies some of the factors that are related to growth in this area.)

Additional resources

- Harris, Dale B., "How Children Learn Interests, Motives, and Attitudes," *Learning and Instruction*, 49th Yearbook of the N.S.S.E., Part 1 (1950), pp. 129-155. (A discussion of the relationship of attitude development to the child's motives. How attitudes can be modified.)
- Havighurst, Robert J., *Human Development and Education*. New York: Longmans, Green and Co., 1953. Chapter 11, "Developing a Philosophy of Life," pp. 142-158. (Discusses the general process by which the adolescent identifies the values and ethics that will guide his behavior.)
- Jones, Vernon, "Character Development in Children—An Objective Approach," Chapter 14, in Leonard Carmichael (ed.), *Manual of Child Psychology*. New York: John Wiley and Sons, 1946, pp. 707-751. (A detailed review of published discussions on character development.)
- Olson, Willard C., "Character Education," in *Encyclopedia of Educational Research*. New York: The Macmillan Company, 1950, pp. 126-134. (A review of methods for appraising character development and approaches to character education.)
- Stagner, Ross, "Attitudes," in *Encyclopedia of Educational Research*. New York: The Macmillan Company, 1950, pp. 77-84. (A review of numerous studies of attitudes—with an extensive bibliography.)

*The nature and development
of intelligence*

Since the primary job of the school is to induce learning, the teacher needs to know as much as possible about the nature and development of learning ability. He needs to know how accurately learning ability can be estimated, how these estimates can be used in promoting maximum learning, what factors influence the development of learning ability, and how the environment may be altered to promote that development.

Children must learn many things. They must learn physical skills, emotional control, social competence, attitudes, beliefs, and ideals. And they must learn facts, artistic skills, and the rudiments of a profession. How well an individual child learns all these things depends on his ability to learn as well as on his opportunities to learn.

We use the word intelligence every day. Or we say that a person is "bright" or "dull," "able" or "stupid," and we feel that that is enough. But these are relative terms. What point of reference are we using? Unconsciously, we are using ourselves as the point of reference. When you say that a fellow student is bright or dull, you mean that you think he is brighter or duller than yourself. And, for the purposes of informal conversation, that is quite enough. No further qualifications or refinements are necessary.

But as a professional teacher you will need to know a lot more about intelligence than the layman does. First, you will be working

with people who are mentally less mature and often less intelligent than yourself. So you will need as reference points the average abilities of the students you are teaching. Second, you will need some kind of scale for measuring the wide range of mental levels among the students with whom you are working. Third, you will be a member of a teaching team and you will need an adequate vocabulary when you make and interpret records and when you try to communicate with other teachers about the levels of mental development among the students for whom you share responsibility.

Our ability to discuss a topic, or even to think about it, is limited by our vocabulary. Our very thoughts are controlled by the words that we can use and understand. A savage who knows time only in such rough units as moons or seasons cannot understand, discuss, or think about time in terms of fractions of a second. Nor can he make or keep appointments based on hours, minutes, or perhaps even days. And so it is with intelligence, or with any other abstract concept. If we are to think and talk about intelligence accurately, we need an accurate vocabulary.

Your professional interest in intelligence

If your classroom instruction is to be appropriate to the intellectual level of each pupil in the class, you will need concrete points of reference and a scale for measurement. You will want to discuss with your fellow teachers the problems that arise from deviations in intellectual ability, and you will need to understand the meaning of intelligence test scores. If you are to insure that each child has some measure of success every day, you will have to know how to appraise his achievement in the light of his ability. You will want to be sure that your teaching will challenge the brilliant child to develop good work habits and to learn at a maximum rate. At the same time, you will want to plan experiences that will allow the dull child to achieve success in keeping with his ability. And if you are to help children to make wise vocational choices,

you must be able to suggest appropriate goals that are within their reach.

*What is intelligence?*¹

THE word intelligence has many different meanings in everyday speech and even in textbooks and professional articles. Usually, we use it to mean "brightness." But "brightness" can have little practical meaning unless we use it to make actual or implied comparisons between children of the same age.

If we say that an eight-year-old boy is "intelligent," we mean, ordinarily, that he is capable of adapting himself to new situations, that he has a good memory and vocabulary, and that he learns readily *as compared with other eight-year-old boys*. A 15-year-old with the same memory, adaptability, vocabulary, and ability to solve new problems would be relatively dull.

Actually, when we discuss the intelligence of children of different ages, we ourselves are often confused about just what we mean. We know that the average ten-year-old child has far better memory, adaptability, and vocabulary than the average five-year-old. Yet, we should not say that ten-year-old children as a group are more intelligent than five-year-old children.

What we need, then, is some means of measuring intelligence so that we will have terms that will be meaningful to others when we talk about it. Think of a chemist who tries to express quantities in such phrases as "a lot of that," or "just a little bit less"! Or a machinist who can say only "not quite so long" or "somewhat wider"! As a professional teacher, you will need some adequate scheme for measuring subtle differences in intelligence.

The meaning of mental age. The term *mental age* is a statement of the child's level of mental development. It is one of our "measurement" terms—fortunately, an easy one to understand.

Let us suppose that we want to build a test that will measure the mental abilities of a group of children ranging in actual age

¹ Chapter 10, "Individual Differences in Ability To Learn," gives further information on the nature of intelligence.

(chronological age) from six to 16 years. We need a number of different test items or problems, just as we do for any test. We need some problems that can be solved by our dullest six-year-old and others that will challenge our brightest 16-year-old. We want each child, regardless of his level of mental development, to find some problems that he can solve and others that he cannot. We may need to collect as many as 200 problems. For our six-year-olds, we include such tasks as putting wooden pegs into holes, or building a small tower of blocks—problems that some six-year-olds will solve and others will not. We ask our 16-year-olds to memorize a series of numbers or to solve a difficult mechanical puzzle—here again, some will succeed and others will fail.

Then we give our test to several hundred children of each age from six to 16. In order to have a fair sample of each age group, we choose children from rural and urban areas and from wealthy and poor families. We may even go to the trouble of determining from census figures the proportion of farm and city dwellers in the population, or the proportions of various occupations, and then choose the same proportions of children from each age group.

After we have given our test to these children and have scored the papers, we can compute the average number of problems solved by children of each age level. Let's assume that the results of our hypothetical test are as shown in Table 1.

TABLE 1 *Average scores of children of different chronological ages on a hypothetical intelligence test of 200 items*

Age	Average Score	Low Score	High Score
6	15	3	57
7	25	5	84
8	43	10	118
9	57	15	128
10	82	25	138
11	102	33	150
12	118	43	159
13	131	57	169
14	146	89	175
15	159	102	185

Obviously, these results would give us considerable information about the relative abilities of children of different ages. Let us examine some of the individual scores. One eight-year-old child answered 118 of the problems correctly, which is considerably better than the average for eight-year-olds. In fact, 118 is the average score made by 12-year-old children. So we can say that our eight-year-old is equal in performance on this test to the average 12-year-old and, since the test was made up of a wide sample of problems designed to measure mental ability, we can say that he has a *mental age* of 12. Once we have developed such a series of problems, and have determined the average performance of children of various age levels, we need no longer be content to use such general terms as "bright" or "dull." Now we can give the level of mental development in much more accurate and meaningful language.

Here is another example. Suppose that one 13-year-old child in our group made a score of 131. This is the average score for children of 13. Thus both his chronological age and his mental age are 13, and he is average in intellectual development.

We could, of course, construct a much more detailed table—for example, one that gave the average score for all children aged six years one month, six years two months, and so forth. But for most purposes a simple estimate is enough. For example, if a child makes a score of 20, we can say that he has a mental age of 6½, since his score is halfway between the average scores of six-year-olds and seven-year-olds.

Actually, tests like the one we have been describing have been administered to many children. We have accurate points of reference for the average mental power of children (and of adults) of any chronological age. These tests provide us with scales for measuring intelligence. We can report that the score made by any child who takes a given test is equal to that made by the average child a certain number of years younger or older. Since academic achievement is directly affected by mental age, we can use these scores to predict with considerable accuracy a child's ability to respond to classroom instruction. *Mental age is a reliable indicator*

of the kind of learning ability that success in most school subjects requires. This is called "abstract intelligence." However, there are other types of ability important to the success of the individual that are not measured by intelligence tests—mechanical ability, social intelligence, musical ability, artistic ability, and other special abilities, for example.

Adult level of mental development appears to be reached at about the same age as adult level of physical development (16 to 18 years). So to speak of the mental age of adults is not particularly meaningful. Although the term is sometimes useful in referring to adults of low ability (a mental age of 10, for example, would mean that the adult's mental development is equal to that of the average ten-year-old child), it means little when applied to adults of average mental ability. For instance, the mental ages of 18, 22, and 25 are almost equal, since the average 18-year-old's level of mental development is approximately the same as the average 25-year-old's.

Intelligence tests are of two general types. One is the individual test, which is given to one child at a time. The examiner stays with the child and gives him instructions orally. Then the examiner interprets the child's answers and records his performance. Obviously, if the results of the individual test are to be reliable, the examiner must be well trained. The other type is the group test, in which printed problems are distributed to a group of children and each child writes his answers in the test booklet or on a separate answer sheet. The advantages of the group test are that large groups may be tested by one examiner and that less skill is required to administer the test. However, since the child must be able to read the problems and to write down his answers, the results are more likely to be influenced by his educational achievement and particularly by his ability to read.

Among the best-known individual tests (or "scales," as they are frequently called) are the Revised Stanford-Binet Intelligence Scales, the Wechsler-Bellevue Intelligence Scales for adolescents and adults, and the Wechsler Intelligence Scale for children. Good group tests include the California Test of Mental Maturity, the

Kuhlmann-Anderson Intelligence Tests, the Otis Quick Scoring Mental Ability Tests, and the Army General Classification Tests.

The meaning of intelligence quotient. We know, then, that if we can measure the level of mental development that a child has reached, we can tell how he compares with the average child of his age. If he is above or below average, we can compare his test score with the average score made by children of other ages, and thus determine his position on a mental-age scale. If an eight-year-old child makes a score equal to the average score for 12-year-olds, we can assume that he has grown, mentally, 1.50 years for every year that he has lived. If he makes a score equal to the average score for eight-year-olds, he is average in mental maturity and has grown, mentally, 1.00 year for every year that he has lived. But if he makes a score equal to the average score for four-year-olds, he has grown, mentally, only .50 of a year for every year that he has lived.

We are making an assumption here that is not always sound. Later in the chapter, we shall find that the rate of mental growth is not always constant. However, unless we know a great deal about a particular child's past and future environment, the best we can do is to assume that his rate of mental growth has been, and will continue to be, constant.

If we multiply our estimates of rate of mental growth by 100, we get the well-known intelligence quotient, or I.Q. We say that the eight-year-old who has reached a level of mental development equal to that of the average 12-year-old has grown 1.50 mental years for each year of his life and thus has an I.Q. of 150. The child who has grown .50 of a year mentally for each year he has lived has an I.Q. of 50.

The arithmetic is simple once we know the child's mental age and chronological age. Let's take our eight-year-old with a mental age of 12 as an example. We simply divide the mental age (12) by the chronological age (8) and multiply the result (1.5) by 100 to get an I.Q. of 150.

The I.Q., then, tells us the *rate* of mental growth. This concept is extremely useful to us in discussing differences in intelligence

and predicting future growth in ability to learn. It gives us two important pieces of information: how fast the child *has been* growing, and a prediction of how fast he *will continue* to grow.

However, we must be cautious in interpreting all test scores. No test is perfectly reliable. Intelligence tests are intended to furnish us with an *estimate* of the child's level and rate of mental development. But they do not measure all the factors that are involved in the ability to learn, some of which are particularly difficult to measure. For example, even the best intelligence tests do not measure the child's motivation or his level of aspiration.

In the hands of a competent examiner, the individual test provides a more accurate estimate of the child's ability than does the group test. But even the individual intelligence test does no better than come within three points of the true I.Q. on about 50 per cent of the cases, within six points on 80 per cent, within nine points on 94 per cent, and within 12 points on 99 per cent of children in the normal range of intelligence.² With children of low intelligence the best tests claim somewhat greater accuracy, but with children of high intelligence the accuracy is even less than with children of average ability.

You can see that the never-ending debate of whether heredity or environment is the major determinant of intelligence need not concern you in the classroom. What you will be concerned about is how far each child's mental development has progressed by the time he enters your class, how rapidly he will continue to develop, what if any environmental factors can be altered to encourage mental development, and what educational modifications must be made for differences in rate and level of development. Those children who have already developed to an average or above-average mental level will probably continue to advance under your guidance. Those who have not developed at an average rate before you meet them will need much greater guidance and encouragement from you. In adjusting your instruction to the mental ability of each child, remember that his I.Q. is not likely to change

² Lewis M. Terman and Maud A. Merrill, *Measuring Intelligence*. Boston: Houghton Mifflin Company, 1937, p. 46.

appreciably unless his environment is sharply modified. And the chances are that he will continue to live in approximately the same home and community environment during his school years as he did before coming to school. So the most you can hope to do is to learn each child's rate and level of development and try to adapt your instruction to his individual needs.

The meaning of percentile rank. The adult level of mental development is reached by about age 16. How, then, can we compare the intellectual levels of a group of adults, such as college freshmen? A good way is to prepare an appropriate test and to arrange for the greatest possible number of college freshmen throughout the country to take it. Then we can compare the score made by an individual college freshman with the scores made by all the others. In making this comparison, we use what is called the "percentile rank." We have a table that tells us what percentage of all college freshmen made the same score or a lower score on the same test. A percentile rank of 64, for example, means that 64 per cent of all college freshmen made either the same score or a lower score than the one made by our individual student. Comparisons of this sort help us to predict how a student will make out in a specific group. Such scores are of much greater value to us in guiding his choice of a college program than are general comparisons with an average group of adults of his own age.

Factors related to intelligence

LIKE ALL OTHER phases of the child's development, intelligence is affected by many factors—both personal and environmental. Here are some that you will be particularly concerned with in the classroom.

Physical traits and intelligence. For many years, people have been trying to prove that certain physical traits, such as high foreheads, long fingers, and large heads, correlate highly with intelligence. But few if any such physical traits seem to be really related to intelligence.

You are familiar with the popular belief that the brilliant child

is likely to be sickly, to wear glasses, and in other ways to be physically inferior to average children. However, a careful study of a group of gifted children (I.Q. 140 and above) revealed that as children and as adults they were taller, heavier, and in better health than the norms for their age.³ Studies of feeble-minded children indicate that they are likely to be shorter and to weigh less than children of average intelligence. And studies of large groups of badly crippled children have reported average I.Q.'s of 82 to 87.^{4,5} When groups of children of the same age were measured,⁶ correlations of height and weight with mental ability ranging from .10 to .20 were reported.

These relationships between bodily development and intelligence certainly are not close enough to justify a prediction that a small or crippled child will be dull or that a large child will be bright. The tendency of the brilliant child to be large may be due to the better cultural stimulation and the better nutrition that he receives in his home. The tendency of the badly crippled child to have a lower than average I.Q. may be due to a number of factors. For one thing, he is deprived of the social interaction that is necessary for optimum mental development. Another reason why crippled children as a group make lower scores on intelligence tests is that the disease, accident, or glandular disturbance that led to the crippling sometimes results in damage to the brain or nervous system.

There is a third factor that may partially account for the lower I.Q. that is obtained by the crippled child. As you can see, in any study of the relationship of intelligence to another trait, the measure of intelligence is the score on an intelligence test. This is al

³ Lewis M. Terman and Melita H. Oden, "The Stanford Studies of the Gifted," Chapter 3, in Paul Witty (ed.), *The Gifted Child*. Boston: D. C. Heath and Company, 1951, pp. 20-46.

⁴ Mabel R. Fernald and Ada H. Arlitt, "A Psychological Study of a Group of Crippled Children of Various Types," *School and Society*, XXI (1925), pp. 449-452.

⁵ Mary V. Lee, "The Children's Orthopedic Hospital: A Survey of the Intelligence of Crippled Children," *Journal of Educational Research*, XXIII (1931), pp. 164-168.

⁶ Harold E. Jones, "Child Development—XVI. Physical-Mental Relationships" in *Encyclopedia of Educational Research*. New York: The Macmillan Company, 1950, pp. 195-197.

sponses, found the average I.Q. of deaf children, ages 12 to 15 years, to be 83.⁶ He also found that these children were retarded in *educational age* (measured by achievement tests) about two years more than they were in mental age. Comparisons between "very hard-of-hearing children" and "hard-of-hearing" children indicate that on a verbal intelligence test the average of the very hard-of-hearing is about two I.Q. points lower than that of the hard-of-hearing. A study of 600 partially sighted children indicated that their average I.Q. was 95.⁹

Home background and intelligence. It has been known for a number of years that children from economically favored homes make, on the average, somewhat better scores on intelligence tests than do those from less favored homes. One author,¹⁰ reviewing the results of numerous studies, says that there is a correlation of approximately .40 between the test intelligence of children and the occupational level of their fathers, and that the children of the professional and executive class have average I.Q.'s of approximately 116 whereas those of the day-laboring class average about 92.

This does not mean, of course, that all children of professional people and executives are bright and that all children of laborers are dull. The total range of intelligence among the children in both these groups extends from feeble-minded to genius. But the educational implications are large. Unless you are particularly careful to see that each child receives instruction appropriate to his ability, the average child from the day-laborer's home will fail to find the school rewarding and will leave the school as soon as he can.

Because executives and professional men have themselves received advanced education, they are likely to put a higher value

⁶ R. Pintner, "A Mental Survey of the Deaf," *Journal of Educational Psychology*, XIX (1928), pp. 145-151.

⁹ R. Pintner, "Intelligence Testing of Partially-Sighted Children," *Journal of Educational Psychology*, XXXIII (1942), pp. 265-272.

¹⁰ Jane Loevinger, "Intelligence as Related to Socio-Economic Factors," *Intelligence: Its Nature and Nurture*, 39th Yearbook of the N.S.S.E., Part I (1940), pp. 159-210.

on education than are laborers. Thus, in the case of the laborer's child, the teacher must do a better job of "selling" education. The laborer's child is handicapped in still another way. Children from homes of higher socio-economic level are provided with more cultural stimulation in the home and have more time for intellectual pursuits. Thus they are able to bring more background to each day's assignment and, since they are less likely to hold a job after school, they have more time for their daily preparation.

Race and intelligence. We must be careful not to overrate this relationship between test intelligence and home background. We cannot assume, for example, that test intelligence and an inherited potential for mental development are one and the same. Although test intelligence is an extremely valuable predictor of school success, it proves nothing at all about the hereditary potential of occupational or racial groups.

One authority on race psychology has estimated that the average I.Q. of the American Negro is about 85.¹¹ He found that northern Negro children averaged about 89 and southern Negro children about 75, as compared to the average of 100 for the white population. But, even with this low racial average, about 20 per cent of American Negro children equal or exceed the average for white children. The same author presents data indicating that the average I.Q. of American Indians is about 75 and that of immigrant Mexicans about 85.

On the average, Negroes, American Indians, and immigrant Mexicans have not been highly successful in our schools, although many have done extremely well. When we consider the average economic level of members of these groups, their low average rate of mental development is not surprising. We can see that the child's opportunity to acquire a rich vocabulary, to use numbers, and in

¹¹ Thomas H. Garth, *Educational Psychology*. New York: Prentice-Hall, Inc., 1937, p. 262. See also Otto Klineberg, "Racial and National Differences in Mental Traits," in *Encyclopedia of Educational Research*, New York: The Macmillan Company, 1950, pp. 951-953, and Martin D. Jenkins, "The Upper Limit of Ability Among American Negroes," *Scientific Monthly*, LXVI (1948), pp. 399-401.

general to develop types of ability that are measured on an intelligence test, is dependent on the opportunities presented by his environment. And when we compare these children with white children of the same economic level, we find no significant differences in I.Q.

One writer, who made an extensive study of the Osage Indians, found them to test about equal to white norms.¹² Interestingly enough, the discovery of oil on the Osage tribal lands some years ago has helped this group to enjoy high economic status. Here, again, we are reminded of the importance of opportunity to learn, particularly in the home. Though our evidence does not establish all races as equal in hereditary potential, there is also no evidence that one race is superior to another.

Academic achievement and test intelligence. As we have mentioned, test intelligence is an excellent predictor of success in school subjects. In fact, the correlation between tests of academic achievement and test intelligence is about .80. The correlation between teachers' marks and intelligence is somewhat lower, usually from about .40 to .50. This lower correlation is probably caused by various personality factors in both the teacher and the pupil. And certainly children's interests and motivations influence school marks more than they do achievement test scores. In addition, both achievement tests and intelligence tests reward quickness to respond and calmness in a test situation. Some children who can answer questions proposed by a sympathetic teacher become confused and unable to answer when the same questions are proposed by a stranger or when the time allowed is obviously being limited.

Teachers' marks, also, are less objective indicators of achievement than is the achievement test. A child who uses words well may impress the teacher more than a child of equal achievement who has less verbal facility.

One study of intelligence tests suggests their predictive value

¹² J. H. Rohrer, "The Test Intelligence of Osage Indians," *Journal of Social Psychology*, XVI (1942), pp. 99-105.

at the college level.¹³ In this study, 589 freshman engineers were given the American Council Psychological Examination. Sixty-three per cent of those who placed in the upper 30 per cent on this test subsequently made a letter grade of "A" in one or more of their courses, although only 10 per cent of those who placed in the lower 30 per cent received this grade.

A less significant relationship exists between intelligence test scores and success in nonacademic school work, such as music and vocational arts. But even here we find a small positive correlation.

The school and test intelligence. Of all the environmental factors that influence children's mental growth, the school is obviously the one in which we as teachers are most interested. Efforts have been made to determine whether or not the stimulation of a good school can be measured by an intelligence test. In one intensive study¹⁴ of this problem, a group of selected children from an orphanage was placed in a pre-school. A control group with approximately the same chronological ages, I.Q. distribution, sex proportion, nutritional status, and length of residence in the orphanage was not admitted to the pre-school. The children ranged in age from 18 months to 5½ years. Their average I.Q. at the beginning of the experiment was about 87. A total of 35 children attended the pre-school for lengths of time varying from half a year to 2½ years. Both groups lived in the regular orphanage cottages. About the only difference in treatment was that one group spent several hours each day in the pre-school building while the other children remained in the cottages.

It was found that the children who attended the pre-school for 20 months or more made an average gain of 4.6 I.Q. points. Those

¹³ William McGehee, "Freshmen Grades and The American Council Psychological Examinations," *School and Society*, XLVII (1938), pp. 222-224. For a review of studies on the use of intelligence tests in predicting school achievement, see Ethel L. Cornell and Annette Gillette, "Construction and Educational Significance of Intelligence Tests," *Review of Educational Research*, XX (1950), pp. 17-26.

¹⁴ Harold M. Skeels, Ruth Updegraff, Beth L. Wellman, and Harold M. Williams, "A Study of Environmental Stimulation," *University of Iowa Studies in Child Welfare*, XV, No. 4 (1938), pp. 1-192.

who did not attend lost about the same amount. The regular orphanage was very crowded and the environment was extremely meager. This tendency of the control group is in line with what has been found in other studies: Children decrease in I.Q. as they grow up in poor environments, such as orphanages, homes for the feeble-minded, backward rural communities, and blighted areas in a city.

The dramatic changes in intelligence that occasionally are reported occur only when the child's entire environment is abruptly altered—home, school, peer group, and community. An enriched school environment alone cannot be expected to result in a substantial change in I.Q. We can, however, expect the school to adjust instruction and appraisal to the child's intelligence. And, since most of the day-to-day learning tasks of the child depend on what he already has learned as well as upon his ability to learn, the school can make certain that each day it contributes as much as possible to the development of that background of knowledge upon which new learning must be built. This portion of the child's preparation for life is very directly under the control of the school.

Psychological factors and learning ability. To obtain an accurate measure of a child's mental ability, the examiner must win his confidence, obtain his cooperation, and make the test situation as interesting as possible. These are problems that the clinician faces whenever he administers an intelligence test.

Some children are so extremely withdrawn that scores on intelligence tests are meaningless. Such children may erroneously be diagnosed as feeble-minded, a condition sometimes referred to as "pseudo-feble-mindedness."

The teacher as well as the clinician may fail to recognize the potentialities of the withdrawn child. Ordinarily, the aggressive children keep the teacher occupied—in fact, the teacher sometimes wishes that more children were inclined to withdraw somewhat. However, even when the withdrawal is not severe enough to invalidate the intelligence test score, it may result in retarding both the social and educational development of the child. And acute withdrawal is a serious threat, not only to the child's intellectual

and educational development, but to his mental health as well. As we know, the potential stimulation of the environment is an important factor in intellectual development, but to benefit from this stimulation the child must interact with his environment.

Almost miraculous rises in I.Q. scores have been reported when withdrawn children were treated with affection and understanding over a period of time. For example, an insecure child who is afforded the enriched environment of a nursery school may show a sharp rise in I.Q. as a result of his increased security and improved emotional adjustment.

Chronological age and intelligence. As you know, the I.Q. is a statement of a person's rate of mental growth. Since growth in the areas measured by intelligence tests ceases some time between the ages of 16 and 18, the concept of I.Q. has little meaning when we apply it to adults. Actually, mental growth, like physical growth, slows down before it reaches a full stop. The exact time at which it ceases altogether is difficult to determine. Undoubtedly, it varies considerably from individual to individual.

Studies of mental age scores and of raw scores on intelligence tests indicate that the level of mental development stays at or near its maximum through the 20's and begins to decline during the early 30's, slowly at first and then somewhat more rapidly. One study reports that intellectual growth continues until ages 19 to 21. Then a gradual decline sets in that results in a drop in the intellectual level by the middle 50's to that level reached by the average 14-year-old.¹³ However, on certain tasks, such as those that place a premium on a good vocabulary or general information, improvement may continue until age 40 or 50.

This chronological decline in I.Q. tells us something important about how intelligence functions in the child and the adolescent. It means that the 18-year-old, for example, is much better equipped to learn new materials and to adjust to new situations than he will

¹³ Harold E. Jones and Herbert S. Conrad, "The Growth and Decline of Intelligence: A Study of a Homogeneous Group Between the Ages of Ten and Sixty," *Genetic Psychology Monographs*, XIII (1933), pp. 223-298. See also Irving Lorge, "Adult Intelligence," in *Encyclopedia of Educational Research*. New York: The Macmillan Company, 1950, pp. 32-35.

be 30 years later. His level of mental development is greater. But he is relatively deficient in other assets that are not measured directly by intelligence tests but that do promote intelligent behavior. For one thing, he is deficient in experience. As he grows older, he will grow in experience even though his level of mental development is declining. So we see that his mental development is highest when he needs it most—when he is meeting new problems, adjusting to new situations, and working out solutions that he will have to live with the rest of his life.

This whole trend is natural and desirable. Since the 18-year-old's interests are wide and general, he wants to investigate and experiment with all sorts of new situations. Then, after he passes 20, he begins to specialize and to develop hobbies; he retreats to his home; and he throws most of his energy into his career.

Intelligence tests, then, are designed for children and adolescents. They help us as teachers to adjust the curriculum to the needs of the individual child; they help us to guide him in choosing a vocation and in planning for his future educational development. In order to help him plan what he is to do next, we must know what development he has already made.

Intelligence as a determiner of life plans. The school, then, makes both short-range and long-range use of intelligence test scores. For day-to-day, term-to-term purposes, it uses them to adjust instructional materials to the mental maturity of each child. For long-range purposes, it uses them to help the child and his parents to plan his later education and to choose his vocation. In the school year 1923-24, the 4,184 sixth-grade students in the public schools of a large city were given the Otis Group Intelligence Scale.¹⁶ In 1935, when they were about 24 years old, a survey was made of the occupational choices, educational attainments, and delinquency records of the 2,485 members of this group who could be located. Table 2 shows us how their occupational choices were related to their sixth-grade intelligence test scores. Although it is not shown in the table, the group's achievement was also closely related to the

¹⁶ *Sixth Graders Twelve Years Later*, Bulletin of the Regional Department of Economic Security, Cincinnati, 1938.

test scores. The median percentile rank¹⁷ for those who did not complete the eighth grade was 15.5; for eighth-grade graduates who went no further, 26.3; for vocational-school graduates who did not attend college, 40.8; for high-school graduates who did not attend college, 67.4; for those who attended college but did not graduate, 71.5; and for college graduates, 78.6. The median percentile rank of the 278 members of the group who had delinquency records was 30.7, as compared with 47.0 for the nondelinquents.

TABLE 2 *Sixth-graders twelve years later (occupational records of 1530 persons given intelligence tests in 1923 and who were employed in 1935)**

1923 Intelligence Test Percentile	Number in the Group Who Were Employed	Number in Each of Four Selected Occupational Groups			
		Professional	Clerical	Skilled Craftsmen	Physical Labor
80-99	277	67	100	12	8
60-79	349	48	122	21	18
40-59	355	37	105	33	25
20-39	320	17	69	38	30
1-19	229	6	26	30	37
Median Percentile for Each Group		73.2	61.8	39.5	34.7

* Adapted from *Sixth Graders Twelve Years Later*, Bulletin of the Regional Department of Economic Security, Cincinnati, 1933, p. 36.

Although Table 2 shows that there is a high relationship between intelligence test scores and occupational choice, it also suggests that these scores are not perfect predictors of the occupation that a child will follow in later life. Nor do they necessarily indicate the level of education he will achieve.

Other studies of children with high I.Q.'s show that they tend to enter occupations that require high mental ability. In a study

¹⁷ Median is the middle score when all the scores made by a group are arranged in order from low to high. It is an average. Percentile rank was defined earlier in this chapter.

of children with I.Q.'s of 140 and above (the average was 150), it was found that 90 per cent of the boys and 85 per cent of the girls subsequently attended college.¹⁸ A large majority of them made superior college records. About 50 per cent entered professions and about 25 per cent chose semi-professional or business careers.

Low I.Q.'s are even more predictive of occupational choice and scholastic success than high ones are. Even in the highly gifted group mentioned above, many became clerks or entered skilled trades, and a few became laborers. The range of intelligence on the semi-skilled and skilled occupational levels is much greater than in the professional groups. Although a high minimum level of intelligence is essential in preparing for a profession, the intellectual giant is not barred from unskilled labor.

For some routine jobs, however, such as assembly-line workers and bus drivers, employers do try to set a maximum intelligence quotient. They know that a brilliant person can learn the skills demanded by such jobs in a short time, but they also know that he will soon lose interest and will stick to his work only if his economic need is great enough. If he is not challenged by his job, his attention wanders and he begins to daydream. Then accidents occur and efficiency drops off. In addition, the brilliant worker who is misplaced in a routine job may become a leader in fomenting trouble among other employees.

At the extremely high level, intelligence quotients appear to lose their predictive value. An I.Q. of 180, for example, seems to guarantee no more success than one of 140. Although many factors are probably responsible, one implication is that the school does not do as good a job as it might in stimulating the brilliant child. A child with an I.Q. of 140 can perform with ease any of the scholastic tasks ordinarily demanded by the high school and, in most cases, by the college. A child with an I.Q. of 180 can accomplish these tasks even more easily, and there is usually nothing for him to do but daydream in the time he has left over. By offering the brilliant

¹⁸ Lewis M. Terman and Melita Oden, "Status of the California Gifted Group at the End of Sixteen Years," *Intelligence: Its Nature and Nurture*, 39th Yearbook of the N.S.S.E., Part I (1940), pp. 67-74.

child little more than we offer the average child, we may be encouraging him to form bad habits of inattention and laziness.

You as a teacher have an obligation, both to society and to the individual, to identify the child with a high level of intelligence and to encourage him to prepare for a career in keeping with his abilities. Remember, though, that a high I.Q. is not enough in itself. If the brilliant child is to make a valuable social contribution after he leaves school, he must possess many important traits in addition to sheer intellectual potential. He must display social intelligence, emotional adjustment, special talents, and the drive to accomplish. So do not assume that there is little you can do in the classroom for the child with unusually high intelligence. In many ways, he presents a greater challenge than the child with average intelligence. Your job is to help him translate his intellectual abilities into behavior that will be personally rewarding and socially beneficial.

The general effects of environment on intelligence

DURING the past 25 years, many psychologists have been studying the effect that a change in environment has on intelligence. Their findings are fascinating to everyone interested in children, especially to us who have a professional interest in the child's mental development.

Actually, the school itself is one of the most potent forces in the child's environment, especially during his early years. The school has almost complete responsibility for helping the child to use his ability to learn to read, to write, and in general to acquire cultural knowledge and occupational training. If test intelligence were a perfect predictor of ultimate educational development, we might well wish for another profession and feel that good teaching was indeed relatively hopeless. And even though we know that intelligence is far from a perfect predictor of educational development, it would be discouraging if we were to find that heredity is the sole

determinant of intelligence. We should like to find that the school years as well as the pre-school years have a great deal to do with the child's rate of intellectual as well as educational growth.

Let's examine a few studies that deal with the possible contributions of the environment to the child's intellectual development.

Heredity and intelligence. Many years ago, only a few people had enough leisure time to read and write about all the things that interested them. These favored few had servants to do their work and money to spend on books. Naturally enough, they found it pleasant to conjecture about what it was that had made them such gifted, superior people. They turned to their ancestors and their relatives to see if they could find the answer there. And they came up with the conclusion that it must be good heredity, their "wise choice" of ancestors, that assured them success in life on earth and, perhaps, in the hereafter. This was a comforting thought, and they published many studies in support of it.

One very popular study was a survey of the 977 most eminent men from a population of about 4,000,000.¹⁹ According to normal chance expectancy, if no correlation existed between eminency and family, only one or two of the eminent men would have had a close relative also in the group and perhaps only three or four would have had a distant relative. But 332 were found to be closely related and 203 were distantly related! Surely that was conclusive evidence.

To provide proper balance, studies were also made of infamous families. Perhaps the best known was that of the Kallikaks.²⁰ Martin Kallikak, a young soldier in the Revolutionary War, once met an allegedly feeble-minded girl at a tavern. By 1912, there were 450 known descendants of their meeting. Of these, 143 were feeble-minded, 36 were illegitimate, and many of the others were of doubtful mentality. Only 46 of the descendants were considered by the investigator to be of normal mentality.

¹⁹ Francis Galton, *Hereditary Genius—An Inquiry into Its Laws and Consequences*. London (1869) and New York (1892): Macmillan and Co., pp. 307 ff.

²⁰ Henry H. Goddard, *The Kallikak Family—A Study in The Heredity of Feeble-mindedness*. New York: The Macmillan Company, 1912.

Environment and intelligence. In recent years, the debate on the relative effect of heredity and environment has gone in another direction. The introduction of scientific methods into psychological studies has strongly influenced both the care with which studies are planned and the interpretations that are made of the results. In short, this is what psychologists have learned: If both the environment and the heredity of two individuals or of two groups are quite different, differences in intelligence cannot be attributed solely to either factor. Obviously, Martin Kallikak's descendants did not have a normal environment, and the children of eminent families have environmental as well as hereditary advantages. So when we study a child's mental abilities, we must always be aware of both his heredity and his environment.

Many carefully conducted studies have been made that show how important a factor environment is in the child's intellectual development. To get an idea of what these studies have told us, let's look at one of them in detail.²¹ One hundred and thirty-nine illegitimate infants, with an average age of three months, were placed in carefully selected foster homes. The intelligence of their true parents was estimated on the basis of tests, amount of schooling, and occupation. The average I.Q. of the true mothers was estimated to be below 90, and that of the true fathers somewhat below 100. On an average, the foster parents had completed 12 years of schooling. One-eighth of the foster mothers and one-fifth of the foster fathers had college degrees. It was possible to follow 100 of these children to age 13½. By the time they were 4½ years old, their average I.Q. was 112; at age seven, the average was 115; and at age 13½ the average on two tests was 112. Although the gain in I.Q. between ages four and seven and the loss between seven and 13½ are not significant, it is likely that had the children remained from infancy with their below-average parents, their I.Q.'s, as a group, would also have been well below average (probably from 90 to 95), instead of about 113.

²¹ Marie Skodak and Harold M. Skeels, "A Follow-up Study of Children in Adoptive Homes," *Journal of Genetic Psychology*, LXVI (1945), pp. 21-53. And "A Final Follow-up Study of One Hundred Adopted Children," *Journal of Genetic Psychology*, LXXV (1949), pp. 85-125.

Earlier in this chapter, we learned that a mental age of 10, for example, means that a child made a score equal to that made by the average 10-year-old child. Thus, if a mental age of 10 is the average score of 10-year-old children, the average I.Q. of 10-year-old children is 100. And of course this is true for children at any age level—the average I.Q. is 100. Actually, however, we place some restrictions on this meaning. Why? Because as obtained from any intelligence test, an I.Q. of 100 merely means that a child is average as compared to children of his age who were in the *standardization group that was used*. For example, when the Revised Stanford-Binet Scale was standardized, only American-born white children were used.²² Obviously this places a restriction on our interpretations of the I.Q. But we already know that it is merely an estimate—not a final and complete answer to a question concerning an individual child's ability to learn.

So, granting that 100 I.Q. is only reasonably near to what we would find if all children were tested, let's see what reference points we can establish for I.Q.'s above and below 100. It has been known for a long time that if we were to measure the height or weight of all 10-year-old children, for example, they would fit rather closely what is called a "normal curve."²³ After testing many thousands of children, it has been found that test intelligence, too, fits well enough so that we can use the normal curve as a point of reference. Actually, there seem to be a few more children at the lower end of the scale than would be predicted from examining the normal curve, but this appears to be due to factors such as birth injuries and disease that result in some children's having a lower I.Q. than they otherwise would have had. But all in all the normal curve gives us valuable information concerning how intelligence would be distributed if it were possible to measure all children.

²² Quinn McNemar, *The Revision of the Stanford-Binet Scale*. Boston: Houghton Mifflin Company, 1912, p. 6.

²³ A "normal probability curve" is a bell-shaped curve governed by a specific mathematical formula. It is the type of curve obtained when a large number of chance factors interact. (For example, if we were to toss 10,000 pennies many times and count the number of heads after each toss, the results would approximate this curve.)

Notice that in Fig. 1 there are more children with an I.Q. of 100 than with any other I.Q., and that the next most common I.Q.'s are 99 and 101. And there are the same number of 110 I.Q.'s as there are 90's, and so on to both extremes of the curve.

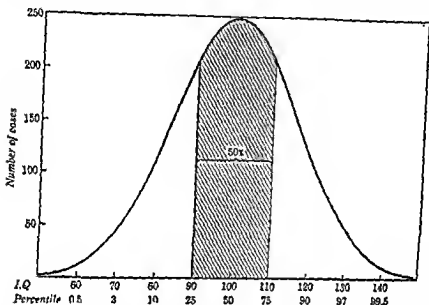


FIG. 1. The theoretical distribution of intelligence (the normal curve), computed for 10,000 unselected cases. Read thus: Of 10,000 children, about 250 have I.Q. of 100; about 300 (3 per cent) have I.Q. below 71.

Now let's examine the findings of a study in which a large number of children actually was tested. The standardization cases used for the Revised Stanford-Binet Scale, though limited to American-born white children, are one of our best sources of information, since a large number of children was tested carefully with an individual intelligence unit. Figure 2 gives this distribution with a normal curve fitted to it for comparison.²⁴

²⁴ You may notice that, although we said earlier that the average score of the standardization cases for a test was 100, this group averages somewhat above 100. This seeming discrepancy was caused by statistical manipulation on the part of the authors of the test that we will not go into here. The manipulation was necessary because the standardization cases contained too many children of superior economic level, and the adjustment had to be made to insure that 100 I.Q. on the test would be average for American-born white children.

Later on, when you begin to study the distribution of I.Q.'s among the children in your classroom, you will want to compare it with the distribution in the general, unselected population. Of course, the two will never coincide, since the very dullest children

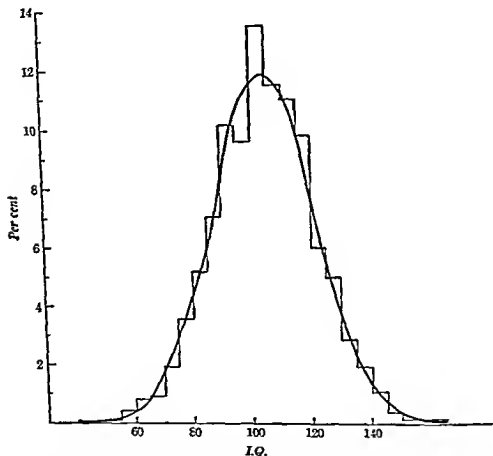


FIG. 2. The I.Q. distribution of 2970 American-born white children (ages 2½ to 18) on Form L of the Revised Stanford-Binet Intelligence Scale, with the normal curve (the smooth curve) superimposed. From McNemar, *op. cit.*, p. 19.

are usually cared for in special institutions rather than in the regular classroom. So the lower limit of your classroom distribution will be higher than it is in the general population. Another thing that you will notice is that the classroom distribution changes from grade to grade, right through the secondary school. For example,

you will find that an I.Q. of 100 is slightly below average during the early elementary-school years, but that it is exceeded by about 75 per cent of the pupils in the tenth grade. Since children with lower I.Q.'s tend to drop out of school as the years pass, the average level is raised.

Your responsibilities as a teacher

WHAT WILL all these facts and figures mean to you when you take your place in the classroom? They will mean a great deal. They will have a direct bearing on how you go about carrying out your professional responsibilities.

Think for a minute about the child with an I.Q. of 70 or below. Psychologists call him feeble-minded. And the normal distribution curve in Fig. 1 shows us that about 3 per cent of the general population can be expected to fall into this same class. In reality, the figure is closer to 4 per cent. That means that three or four out of every hundred children in the general population are feeble-minded. Of course, not all these children enter school, but about five-sixths of them do. And many of them continue to attend school until they can drop out legally. So if you work with a typical group of children, in the elementary-school years at least, you can reasonably expect that about three out of every hundred will be feeble-minded.

What about the so-called "dull" children—those with I.Q.'s between 70 and 80? You will find about seven dull children in every hundred. Altogether, then, there will be about ten feeble-minded or dull children in every hundred you work with.

Obviously, these children cannot compete for academic success with average or above-average children. They cannot be given the same assignments, nor can they be appraised according to the same scales. If you fail to recognize their needs and limitations, you will force them to look elsewhere for the security and recognition that they so desperately need. But if you are patient with them and help them to learn at their maximum rate, without de-

manding that they do the impossible, you can encourage them to develop the self-respect and personal adjustment that they need in order to make a worth-while place for themselves in life.

Then there are the brilliant children—the ones with the very high I.Q.'s. These children seldom seem to present a problem to the school. But the school often presents a problem to them! Unless you are very careful, you will find yourself spending all your time with the average children (of whom there are so many) and the below-average, simply assuming that the brilliant children can take care of themselves. You know that they can learn something after only one reading or one explanation that the average child has to have explained two or three times and that the dull child may have to work over for a whole day. So while you are busy with the slower learners, you may leave the brilliant child to busy himself with doodling, daydreaming, or running errands. And sometimes he is even penalized for his unusual abilities. The 10-year-old with an I.Q. of 140, for example, may talk and think so like an adult that we forget that in other areas of development he may still behave like a 10-year-old. We may expect too much of him and lose our patience when he does "act his age." The greatest danger, of course, is that he will find the classroom a dull and unexciting place unless you make some attempt to provide him with real intellectual challenges.

With all these children—those with the highest I.Q.'s, those with the lowest, and those in between—your responsibility as a teacher is basically the same: to fit your instruction to the abilities of each child. *All the techniques and methods that you learn in your other courses will be meaningless if you shirk this basic responsibility.* Just as the chairs and desks in the classroom must be fitted to the physical size of children, so must your instruction and classroom materials be fitted to their intellectual "size." And this is a demanding task, since individual differences in intelligence are far more subtle, far more difficult to identify and to accommodate, than are differences in physical size.

Logically, if you tailor your classroom instruction to individual needs, you should also tailor your evaluation and reporting prac-

tices to those same needs. Each child's performance should be evaluated and reported in terms of his ability to perform. You may find that the school system in which you will be teaching still uses traditional grade cards for reporting to parents, although many schools are abandoning this practice in favor of more informal and informative reporting schemes. But no matter what system is used, you can encourage parents to visit the school and to talk with you about their children's progress. Since parents are sometimes unaware of the true intellectual abilities of their children, they may make unreasonable demands on them that lead to emotional and social maladjustment. One of your responsibilities as a teacher is to share your knowledge about each child's intelligence with his parents, so that together you can create a home and school environment that will lead to healthy growth in every area of development.

As you prepare to take your place as a professional teacher, you will be thinking constantly about how you can challenge every child to use his intellectual abilities to the fullest and how you can insure that every child, every day, will experience some success in keeping with his abilities.

Problems and projects

1. What factors tend to make individual differences in level of mental development greater in the high school than in the elementary school? What factors tend to make them smaller?

2. Defend or attack the following statements: The average I.Q. of high-school graduates has fallen during the past 25 years. This is desirable.

3. List some specific adjustments in assignments, class projects, and grades that you might make in your teaching later on.

Suggested readings

Baker, Harry J., *Introduction to Exceptional Children*. New York: The Macmillan Company, 1953. Chapter 14, "The Nature of Intelligence," pp. 221-243. (An excellent supplement to the text's discussion of intellectual development.)

Additional resources

- Dennis, Wayne (ed.), *Readings in Child Psychology*. New York: Prentice-Hall, Inc., 1951. Part 6, "Intelligence," pp. 320-377. (Reprint and discussion of six important articles on intellectual development.)
- Goodenough, Florence L., *Mental Testing*. New York: Rinehart and Company, Inc., 1949. Part 1, "Historical Orientation," pp. 3-94. (An interesting discussion of the social and educational need for mental testing and a history of its development.)
- McNemar, Quinn, "A Critical Examination of the University of Iowa Studies of Environmental Influences upon the I.Q.," *Psychological Bulletin*, XXXVII (1940), pp. 63-92. (Summarizes the weaknesses of the "Iowa Studies" in experimental design, statistical analysis, and interpretation.)
- Olson, Willard C., and Byron O. Hughes, "Growth Patterns of Exceptional Children," *The Education of Exceptional Children*, 49th Yearbook of the N.S.S.E., Part II (1950), pp. 61-82. (Material on the social and physical development of the intellectually gifted child.)
- Wallin, J. E. Wallace, *Children With Mental and Physical Handicaps*, Chapter 1, "Introduction." New York: Prentice-Hall, Inc., 1949. (Discusses the relationship of physical defects to mental development.)
- Wechsler, David, *The Measurement of Adult Intelligence*, 3rd ed. Baltimore: The Williams and Wilkins Company, 1944. (Chapter 1, "The Nature of Intelligence," pp. 3-12, discusses what is meant by intelligence and evaluates various theories. Chapter 3, "The Concepts of Mental Age and Intelligence Quotient," pp. 19-35, presents material on the growth and decline of mental abilities and the meaning of M.A. and I.Q.)

PART TWO *How and why people learn*

- CHAPTER 7** *Motivation: The why of human behavior*
- CHAPTER 8** *How we learn*
- CHAPTER 9** *Learning in the classroom*
- CHAPTER 10** *Individual differences in ability to learn*
- CHAPTER 11** *Reading, thinking, and communicating*
- CHAPTER 12** *Evaluating the results of instruction*

Motivation:
The why of human behavior

The teacher must know a great deal about the way of human behavior if he is to create effective learning situations. Behavior is modified only in response to needs. Classroom learning and personality development take place only when present responses are inadequate to satisfy needs. In our study of human behavior, we try to discover how school tasks can be made significant and purposeful to each child.

Motivation is one of the most fascinating and important areas in psychology. If we can understand the motives of a child, we can understand and even predict his behavior. Why is this true? Because motives are the dynamic force that energizes behavior. It is motivation that compels the child to act. And motives are persistent—they keep him acting until he finds satisfactions for them. Not only do motives keep him acting, they direct his actions toward specific goals.

As you can see, you have a professional need for understanding motivation. You will want to master both the theory (the "why") of motivation and the methods (the "how") through which you can use motives to guide behavior and to promote learning.

There are certain basic motives or needs that every person—child and adult—strives to satisfy. So long as our present behavior and knowledge are adequate to satisfy all our needs, we do not change our behavior or acquire new knowledge. We modify our attitudes, interests, and personalities, and we acquire new knowl-

edge, only when our present behavior and knowledge do not satisfy our motives. The only things that appeal to us, the only goals that we desire to attain, are those that will help us to satisfy some strongly felt motive.

To learn something new, then, there must be (1) a goal that attracts us and (2) some *obstacle* that keeps us from attaining that goal. For if no obstacles stood in our way, our present behavior and knowledge would take us directly to our goals and we would have no need to learn.

We learn only when there is no other way for us to reach the goals that our unsatisfied motives create. When we feel a need for learning, for example, it is because we are convinced that we can satisfy some motive only by acquiring learning. This felt need is a far more important element in the effective learning situation than is the simple physical presence of materials to be learned.

—Let's look at why we learn from another angle. You want to be a *successful* teacher. That is a goal that appeals to many of your psychological needs. You want the esteem of your pupils, their parents, your fellow teachers, and your supervisor. And you want to feel a pride in your own professional skill. In addition, you want to be secure in your position as a teacher. Thus professional skill and knowledge become very real goals to you. Are there any problems that must be solved before you attain these goals? You can see that there are numerous problems. Somehow you must learn a great deal about boys and girls as well as about general teaching methods and materials. You suspect that to reach your goals you must learn about the motives of children and how you can appeal to these motives. /

Have you *ever* noticed how much a child learns when he sets out to raise a calf or a pig, to plant a garden, or to build a radio, a soap-box automobile, a telegraph set, a telescope, or a club house? Although few of the conditions are present that we like to think are essential to an effective learning situation, he learns more on his own than he does when he attacks some of our well-planned classroom problems. When he feels a strong enough need, the

child reads instructions that under ordinary circumstances are far beyond his reading level, and he obtains information from his elders without any forcing on their part. No record of attendance is required—no threat of examination is needed to keep him at the task. Yet in our clean, well-lighted, and well-equipped classrooms, we find that we must force information on this same child, and we find it difficult to teach him to solve tasks that appear far simpler than the extracurricular and freely chosen learning activities that he handles with ease.

Why is this true? Why does a child who must collect money for newspapers learn to make change correctly? Why does a child find it easy to remember what movie is playing at any theater at any time? Why does he have no trouble learning how to travel from one part of a large city to another and yet encounter extreme difficulty in learning to follow the simplest directions for cleaning his room or preparing a theme?

The answers to these questions lie in the fundamental needs of children. We can provide children with every opportunity to learn, but, if they feel little or no need to learn what we want them to, their learning will be slow and meager. Since need arises only when motives demand satisfaction, we must try to identify the basic motives that affect both children and adults.

Because a study of the "why" of human behavior contributes so much to our understanding of effective learning situations, we shall devote this whole chapter to motivation. Then, in Chapters 8 and 9, we shall look at the specific effects that motivation has on classroom learning. In a sense, then, this chapter will introduce you to the remaining chapters, and will help you integrate the materials you have studied in the preceding chapters. In this chapter we shall study *why children learn* in both the classroom and in life outside the school.

Motives themselves do not vary greatly from person to person. Differences in behavior from one person to another result primarily from differences in the obstacles they encounter as they seek to satisfy their motives. So first let us examine the motivational forces

that form the central core of human nature—the rules that govern the learning of all; and second let us look at the problems that make one child or one adult different from another.

The motives of man

MOTIVES are the drives that energize all behavior. Every learned act that we perform—simple or complex—and the manner in which we perform it are the results of our attempts to satisfy motives. The child's learning, both in the classroom and in informal activities, and the personality traits that he exhibits are but symptoms of his strivings to satisfy his motives.

The motives that energize human behavior can be divided into three broad groups: (1) physiological motives, (2) psychological motives, and (3) habit motives.

Physiological motives. These are the motives that insure the preservation of life for the individual and for the human race. They include hunger, sex, fatigue, elimination of body wastes, thirst, avoidance of pain, and the desire to maintain a proper bodily temperature. These motives are present in all animal life, but in man their method of expression becomes so interwoven with his learned social customs that it is exceedingly difficult to isolate them. The same pattern of behavior may be aroused at different times by different motives, and any single pattern of behavior is likely to be caused by numerous interacting motives. Our methods for satisfying our physiological motives are often intimately related to psychological motives and habit motives.

Psychological motives. Psychological motives (sometimes called "ego" motives) are extremely important determinants of human behavior. In lower animals these motives are of little importance, but in man they often exert a stronger pressure than the more basic physiological drives. The cave man's direct approach to the problems of securing food or winning a mate has long since been modified by the forces of law and social custom.

Our desire to maintain and bolster our *self-esteem* and our feeling of esteem in the eyes of others, and our needs for security and for

new experiences, are the important psychological motives. Many different terms have been used in referring to these motives. Some psychologists, for example, believe that man has a psychological need to conform and to master. But we can consider conformity and mastery as parts of man's basic drive for security and esteem.

Situations involving a conflict between psychological motives and physiological motives give us some idea of how strong psychological motives really are. Probably no physiological motive is stronger than the desire to live. But we know that men in battle have volunteered to hold a position protecting others even when they knew that they were going to almost certain death. Self-preservation could motivate them in but one direction—retreat. Yet some military units have been able to build a tradition so strong that every man will volunteer for any mission, regardless of its danger. All the physiological motives urge them toward self-preservation, but the psychological motives alone are powerful enough to make them comply with the tradition.

Why are psychological motives so powerful? One reason is that we can seldom satisfy them completely. We may enhance our security, but we are never secure in a final and complete sense. Our feelings of security can be nurtured but never satiated. And so it is with self-esteem and our feeling of esteem in the eyes of others. We work and strive for ever greater conquests. As soon as we have attained one goal, we set up a new, more difficult one. There are probably few men who, once they have been elected governor or senator, do not dream of extending their authority and prestige over the whole nation. And kings and dictators have often thought longingly of ruling the whole world. Physiological motives, on the other hand, can be completely satisfied—at least temporarily. And in our culture the goals that satisfy our physiological motives are more easily attained than are the goals that minister to our psychological needs.

Most of the behavior problems that you encounter will result from threats to the child's feeling of security, self-esteem, or the regard of others. These threats occur in the home, on the playground, and in the classroom. A problem exists for the child

whenever he is blocked in his attempts to satisfy his psychological motives. He has a constant need for security and esteem that he actively seeks to satisfy. As a skillful teacher, you will want to construct problem situations that offer the child an opportunity to satisfy his psychological drives. Because these motives are so powerful, attempts to satisfy them lead to the most effective learning.

Habit motives. A habit, once it is well established, furnishes its own source of motivation. Originally, it may have been formed in an attempt to satisfy needs based on a physiological or psychological motive. We learn to comb our hair or brush our teeth because it increases our security, self-esteem, or esteem in the eyes of others. However, once the habit is established we retain it. It acts as a motive in its own right long after the original source of motivation has become satisfied in other ways. Smoking, chewing gum or tobacco, cleanliness, following a certain route to school, posture, pitch of the voice in speaking, and application to the job at hand are other examples of such habits.

The problems of life

IN MANY respects, the problems that we meet in life are even more important than our motives, because it is the problems that compel us to change our behavior—that make us learn. The psychologist often refers to these problems as frustrations, and to the tense feeling that arises when problems are encountered as a feeling of

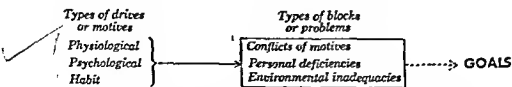


FIG. 1. The motivations and frustrations in human behavior.

frustration. Figure 1 shows us the three general types of frustration that can block our motives.

Conflict between motives. As you have often been told, "You cannot eat your cake and have it too." You have to resolve the con-

dict between two or more motives. You want to save your money for future needs, but a new suit of clothes or an evening at a night club seems desirable too. You want to attend school during the summer to prepare yourself for a better position, but travel or a summer at a resort offers more opportunity for new experiences. The child in the classroom wants to win your approval, but he finds that in order to do so he must earn the disapproval of some of his fellow students.

Personal deficiencies. Personal deficiencies make up a second general class of frustrations. Because of insufficient size, strength, or agility, a child is unable to compete successfully with his fellows in rough-and-tumble play. Because of some lack of attractiveness, such as being too large or having a poor complexion, a girl is rejected by members of either her own or the opposite sex; because of insufficient intellectual ability, a child fails to attain success in the classroom; because he has suffered the loss of an arm or a leg, or is afflicted by muscular paralysis or some other disability, a child may lose both security and self-esteem.

Environmental inadequacies. Our third class of frustrations includes those that arise from a deficiency in the environment. A sailor is unable to obtain fresh drinking water. An explorer cannot find enough game to live on. A boy cannot secure spending money or clothing that meets the standards set by his fellows. A girl is ashamed of her clothes, her home, or the neighborhood in which she lives. Frequently the home, the school, and the peer group make social, intellectual, or emotional demands on the child that he is unable to meet. A personal defect that would be insignificant in one environment poses an insoluble problem in another. The race, nationality, and religion of the child become serious problems in one group and highly acceptable characteristics in another.

How we react to the problems of life

AS LONG AS we are able to satisfy our motives, we have no real need and are faced with no real problem. If we can eat when we

are hungry, drink when we are thirsty, receive the praise of our fellows, feel secure in our job and family, and brush our teeth if we are in the habit of so doing, we are scarcely aware of the potential power of our motives.

But when we are unable to satisfy our motives immediately, our contentment vanishes and we become tense. Mentally or physically, we spring into motion. Motion is typical of all animals in problem situations. We may learn to suppress physical motion by finding that mental activity is more likely to lead us to a solution of our problems, but the tendency to move remains with us. This tendency appears to arise from a heightened muscular tension that is typical of our behavior whenever we encounter a problem that we cannot solve immediately. This type of reaction has had survival value through the long period of animal and human development. If our ancestors had felt contented and relaxed when they grew hungry, they would have starved and we would not have been born. If they had become sleepy when their motives were frustrated, they would have failed to avoid pain or to seek warmth. In short, the restlessness, aggression, and wakefulness that we experience when we are frustrated are natural responses, and, at least until recent times, have contributed to the preservation of the individual and the survival of the species.

As we move about in our search for a solution, our behavior may be based on trial and error, or it may progress through a planned series of attempts to investigate the various possibilities for solving the problem.

But we can plan and carry out an intelligent campaign only if the present obstacle resembles one that we have overcome in the past. Our physical tension mounts and our search for a solution becomes more random when we feel that we are faced with a problem that is really insurmountable. The tension may lead to digestive disturbances and to acts of aggression toward individuals or other objects in our environment. Problem-solving behavior is a highly active process.

This pattern is typical of human behavior. The problems that stand between us and the satisfaction of our needs compel us to

search actively for solutions. If a high-school girl feels that she needs a new party dress, she may be willing to take a job to earn extra money even though she has to sacrifice sleep and recreation. In the classroom, this same need for social approval may compel a child to sacrifice play time so that he can keep up with his classmates in spelling or algebra.

Personality is shaped by the problems encountered and by the individual's solution to those problems. If the girl who felt the need for a new party dress had chosen instead to filch money from her mother's purse, or if the school child had copied from his neighbor's paper, and if these actions had resulted in general satisfaction, each child would have taken a serious step toward developing an unsavory personality. Thus motives are the life force, but the problems encountered shape life's course.

Motivation in the classroom

FORTUNATELY, our civilization forbids the use of physical force to compel children to learn. The teacher is not permitted to block physiological motives intentionally in order to force a child to master a mathematical problem or the parts of speech. Instead, we rely almost exclusively on psychological motives and on habit motives to encourage learning in the classroom.

And these are important motivational forces. The child needs the approval of both his teacher and his classmates. He wants to receive good marks to show to his parents and to convince himself of his own adequacy. By guiding and rewarding his curiosity, which is primarily a desire for new experiences, we can encourage him to move on from one valuable learning experience to another.

The habits of work and attention that we help the child to develop will carry him through many tasks for which he feels no immediate need. Once developed, correct habits of learning are perpetuated by two very strong forces: (1) the motivational value possessed by all habits and (2) the efficiency and ease of effort that they carry with them.

A general principle of behavior is that the individual tends to eliminate unnecessary motion. As he practices a task, he becomes more efficient. For example, if a child attempts to find information in a book, he flounders about. But after he is taught to use the index, he goes directly to the proper place and finds what he wants. With practice, he forms the habit of using the index and, since this leads him most directly to his goal, he has an added reason for retaining his habit. We must consider this factor of efficiency when we seek to break habits that have become well established. If we have learned to operate the typewriter by the hunt-and-peck system, we are not likely to change to the more effective touch system without considerable motivation and instruction. To make a change would interfere with our existing habits and would result, at least for a time, in a loss in efficiency. However, once we do make the change and grow competent under the new method, our efficiency supplements the force of our new habit to guarantee that we will maintain it. Thus, though it is difficult to discard old habits of work and to adopt new ones, if we can once find better methods *and practice them for a time*, they will be retained.

✓ The relative value of various goals. In a sense, striving toward goals is nothing more than an attempt to satisfy motives that have been blocked by obstacles or problems. Once we have reached our goal, we tell ourselves, the tension created by our present failure to overcome our problems will be reduced.

The effort that we expend to achieve a given goal is determined by a number of factors, some of which are more powerful than the importance of the goal itself. We strive harder for a small satisfaction that we can attain *now* than for a much larger goal that we can attain only at the end of a long period of time. A dime held near to the eye appears to be larger than the sun; a small reward attainable *now* may loom larger, and may induce more effort, than a great reward that can be obtained only in the indefinite future. When we set out on a 20-mile hike, the thought of arriving at our destination hours later furnishes us with little immediate satisfaction. Instead, we *pick out a tree or a hill a mile or so away* and then watch as our footsteps make the distance dwindle.

And so the child strives far harder for a gold star or a word of praise that he can get this morning or this afternoon than he does for a Ph.D. that will not be within his reach for twenty years. But notice that the higher his level of intellectual development, the longer he is willing to wait for rewards. The mature student is quite content to work for goals that are in the far-distant future. He is able to break his major goals down into the smaller steps of a book read, a paper completed, a few pages written, or a semester of study accomplished.

But immature students have not yet learned that the only way to reach important goals is by moving forward a step at a time. As a matter of fact, since their experience is so limited, they may not even be aware of the existence of distant goals. So one of your big jobs in working with these pupils is to break down the large but relatively unattainable goals of life into small, attainable goals. At the end of each small unit of accomplishment, you will want to provide opportunities for reward through a sense of accomplishment, through a satisfaction of curiosity, or through a feeling of teacher or group approval. The child cannot work for a mastery of arithmetic simply because he may need it when he becomes an engineer many years later. Each small step in the long-range plan must prove rewarding to his curiosity, his security, his self-esteem, his esteem in the eyes of others, or to some other motive.

Only by making sure that every unit of work will satisfy some need of every child, can we create a good learning situation. Pupils are more likely to strive toward vital goals when they themselves feel that the goals are important than when they are prodded by a taskmaster.

When the school provides for the satisfaction of needs, pupil motivation soars to the same high level that exists in out-of-school, informal, child-directed learning situations. What is more, the learning is directed toward a planned end. To the values of out-of-school learning, we add adult assistance and planning, the facilities of the library, well-lighted classrooms, and carefully chosen laboratory equipment.

But here is where our thinking about education so often goes

astray. True—the tasks to be performed must fulfill a felt need of the child. But this alone is not enough. The tasks must also point toward definite and wisely chosen goals that possess social utility and that prepare the child to meet future problems of life. The school must be child-centered, but the child must not be deserted by the teacher and the curriculum-maker and left to chart his course unassisted. Since he cannot appreciate how great his future need will be for certain skills and knowledge, he is entitled to the very best guidance that educational experts can offer him. It will be your duty, as a teacher, to see that the child's activity takes him in a desirable direction and at the same time fulfills needs that he feels at the moment. As you grow in experience, you will discover that goals with high social utility can be made as rewarding to the needs of the child as goals with little or no utility.

Levels of aspiration. Different persons aspire to different levels of attainment. If we are to make an accurate estimate of how valuable a goal is to a specific child, we must think not only of how important it seems to us as adults, or of how soon the child can attain it, but also of how attractive it seems to the child. Goals that seem to us to have the same apparent size and to be the same distance from attainment may differ greatly in attractiveness from child to child. One reason is that individual children have individual needs. Some children are most in need of security, others of self-esteem, and still others of new experiences. These needs arise from the life problems that the child is encountering at the moment and from the level of aspiration that has been determined by himself, his family, and his associates.

His race, his religion, his family, his teachers, and his friends have taught him what values to place on various goals. One family places a high value on scholarship and assumes that its children will do well in school and will enter a profession. A child from such a family will need high marks to maintain his security, self-esteem, and esteem in the eyes of others. Another family places a higher value upon material possessions and urges its children to get a good job as soon as possible. The members of a minority group who have had few educational and cultural opportunities may

expect relatively little from their offspring, whereas the members of another group may expect a great deal. One religious group may place high value on conformity to moral codes; persons who do not belong to any religious group may emphasize the importance of attaining a large share of worldly goods. A child's friends may be interested in music, art, and books, or in baseball and fishing. All these and many other aspects of the child's experience and of his present environment help to *determine how attractive various goals will seem to him.*

If the child sets up goals that are in proportion to his abilities, he will probably succeed in reaching them. But if his goals are so high and his abilities so low that his efforts are not rewarded, he will be forced either to set a lower goal for himself or to choose quite different goals—goals that may even be socially unacceptable.

You will want to help each pupil to set his levels of aspiration low enough to guarantee some measure of success as he strives toward them, yet high enough to produce enough frustration to call forth effort and to stimulate learning. The level of aspiration is one determinant of how much frustration he will encounter. Since we find little or no motivation without frustration, and since no learning occurs without both motivation and frustration, the level of aspiration must not be too low. On the other hand, if the goal seems unattainable, the child may be driven into despair, unhappiness, random activity, and aggression. Ideally, the goal should be attainable but high enough to be difficult. Such a goal fosters high motivation and stimulates the child to make logical exploratory efforts.

How the "personality" determines values. Each of us behaves with some degree of consistency and stability. Our individual pattern of behavior is controlled by our habits, by our levels of aspiration, and by our past experiences in achieving success or suffering failure. This pattern is a major portion of what we call "personality."

Though we usually think of our personality as affecting others, its effect upon our own behavior is no less important. One person—through habit, level of aspiration, and successful experiences in the past—places a high value on honesty; another seeks immediate

successes without regard for the methods that he must employ to attain them. One child must aim for the praise of parents and teachers; another for the attention of his peer group. And still another must find his successes and excitement in a dream world. One adolescent comes to need a camera, a coin collection, or the security and prestige of a good job; another needs a fast car or flashy clothes.

Thus, when you make an assignment, show a film, or give a demonstration, each pupil views this classroom experience from an entirely different vantage point from that of every other pupil—each seeks different goals. In reading a story, one child's past experiences and levels of aspiration make him identify himself with the hero, another with the heroine, and still another with the villain. One child gains his greatest pleasure from the wealth or physical traits of the hero (or the villain), another from his romantic successes or power over others.

Motivation for learning

AS A TEACHER, you will be interested in how motivation influences the acquisition of skills and knowledge in a school situation. In Chapter 9, we shall look closely at the problem of learning in the classroom. Here we shall discuss some aspects of motivation that are not directly a part of the classroom situation.

"Plateaus" in learning. Over a long period of time, the development of a motor skill, such as typewriting, working on an assembly line, or sending code messages, follows a fairly predictable pattern. At first, the individual shows a rather rapid increase in efficiency. This is followed by a period of slow improvement and then by a long period in which little or no improvement is made. When a secretary first learns to typewrite by means of the touch system, for example, her speed develops during the first year of practice from zero to perhaps 50 words per minute. The next year or so of practice may bring her speed up to 60 or 65 words per minute. After that, she will probably maintain the same level of skill for many years, with slight day-to-day fluctuation. This will be true even

though she receives a certain set fee per page typed and it is to her advantage to type as rapidly as possible. We might decide that she has reached her physiological limit. However, psychologists discovered long ago that although individuals do reach a level beyond which they do not progress as long as their need remains the same, a substantial increase in need will result in progress far beyond what originally appeared to be their limit. When sufficient additional motivation arises, further improvement takes place and the individual may continue to improve for a substantial period of time.

If our typist, for example, is promised a promotion that involves prestige and money if she can attain a level of speed well beyond her present maximum, there is a good chance that she will succeed—assuming, of course, that the goal is not actually beyond her abilities. Habits of working at a speed that satisfies the individual's present motivation will not be broken until his motivation is substantially increased. He is content with his present performance even though it is well below his physiological limits. Each individual's level of performance is determined by a combination of his abilities, his level of aspiration, and the habits of work that have proved adequate to satisfy his current needs.¹

Of course, the ability to attain various levels of skill does vary from person to person. But regardless of our real physiological limit, we seldom come very near to attaining it. And the nearness with which we do approach it is determined by the extent of our needs.

Although we have been talking here only of simple motor skills, there is evidence that other types of learning, problem-solving, and competence in doing complex tasks, such as reading with speed and understanding, also depend on the amount of motivation furnished by our present needs.

The use of incentives. Rewards designed to influence behavior are often called incentives. To influence behavior significantly,

¹ For a review of studies in motives and incentives, see Paul T. Young, "Motivation," in *Encyclopedia of Educational Research*. New York: The Macmillan Company, 1950, pp. 755-761.

however, the reward must be needed. It must serve to satisfy some motive. In the school we offer the child interesting experiences and opportunities to satisfy his curiosity and to achieve status and self-esteem. For example, a child can have numerous incentives for reading about the pioneers. His curiosity concerning what solution they will find to each problem acts as an incentive. And he identifies himself with Daniel Boone or David Crockett and obtains interesting experiences. He is able to share his experiences with his classmates and gain their attention and approval. He gains a word of praise or a sense of security from his teacher. His reading may result in a better grade and heightened self-esteem and esteem in the eyes of his parents.

In business and industry a bonus or a promotion may be offered as a reward for extra effort. In any situation, the most successful incentives are those that appeal to one or all of the psychological motives.

Positive and negative incentives. Educators have stated repeatedly that praise is stronger than reproof. But before we accept such a broad generalization, we should look closely at what is known about these common incentives.

Both praise and reproof are strong drugs. If praise is administered constantly over a period of time, it loses much of its potency. In addition, how effective it is depends a good bit on the personality of the person who administers it. We expect praise from some individuals and accept it almost as we would accept silence from another. And if we hear little but praise from everyone, we grow to value it less and less.

The same is true of reproof. If a teacher constantly berates his students, they come to expect it. In fact, if a student fails to receive his fair measure of reproof for the day, he may lose status with his fellows. And so it is in the home. A child who receives little but reproof from his parents comes to expect and accept it. Its sting becomes dulled. But give such a child an unexpected word of praise and he will grasp it as a jewel. He will treasure it as a rare source of satisfaction.

Both praise and blame, like certain drugs, lose their effectiveness

as we become tolerant of them, but our tolerance varies in relation to the individual from whom we receive them. We strive for a word of praise from one person either because he rarely gives praise or because his good opinion is necessary for our security. A word of reproof from another person may fail to stir us either because we have come to expect it or because his good opinion is of little importance for our feeling of security. If praise or blame is to affect our behavior, it must either satisfy or threaten our security, our self-esteem, our esteem in the eyes of others, or some other motive.

The varying effect that praise and blame have on different individuals has been well demonstrated by experiments. During one learning experiment, a group of introverted children and a group of extroverted children were praised at certain times and blamed at others.² The extroverted children made more improvement when they received blame than when they were praised, but the opposite was true of the introverted group. Other studies suggest that the extrovert tends to come from an environment where praise is more common than blame and that the opposite is true for the introvert. Typically, the introvert's development has been marked by strong repression whereas the extrovert has been encouraged to express himself and has often been the center of favorable attention.

Other things being equal, then, which has the more powerful effect on classroom learning—praise or blame? As you might expect, praise seems to be somewhat more powerful in actual practice. However, the evidence indicates that both serve to stimulate learning, since either one seems to produce better results than no comment whatsoever.

Praise and blame are examples of positive and negative incentives. Although individuals may react somewhat differently because of different past experiences, it is more pleasant to all of us to strive for positive rewards than it is to escape from negative threats. We strive either to improve our status or to prevent loss of

² George G. Thompson and Clarence W. Hunnicutt, "The Effect of Repeated Praise or Blame on the Work Achievement of Introverts and Extroverts," *Journal of Educational Psychology*, XXXV (1944), pp. 257-266.

our present status. Which motivation will result in greater effort depends somewhat on the nature of the individual and on the nature of the promised gain or possible loss.

Quite apart from the actual effort induced by different motivating situations, we as teachers must also be interested in the mental health of each child. Striving for advancement, particularly when it leads to success, is accompanied by a happy, pleasant feeling. Striving to prevent a threat to our present status, however, even if it is eventually successful, is accompanied by an unhappy, unpleasant feeling and by worry. The maladjustment evidenced in "nervous breakdowns" is more closely related to overworry than to overwork. Positive incentives in themselves, then, contribute more to the mental and emotional well-being of children than negative incentives do.

Interests

as a product of motivation

INTERESTS are a specific type of positive incentive. They are capable of arousing and sustaining concentrated effort. For this reason, we shall want to study them carefully. How much appeal the classroom material has to a child's interests determines to a considerable extent how hard and how long he will be willing to concentrate on it. For the most part, study fatigue is created by nothing more than disinterest or boredom.

Why children differ in interests. Since children learn new things in order to satisfy physiological and psychological motives, biological factors have a strong influence on the development of their interests. If a child is large and agile, he is likely to gain self-esteem and the esteem of others from physical competition; if he is small or awkward, his security and prestige are likely to be threatened. If a child finds that experiences in the classroom nurture his security, he comes to enjoy being a student and to spend more time and effort in studious pursuits. If an adolescent girl finds that boys admire her, she is likely to enjoy dancing and similar activities

in which she can receive their attention; if boys do not seek her out, she will find other activities to nurture her self-esteem.

Most interests are the product of past experiences. The goals that a child discovers to be approved by his family and his community, the experiences he has had with books, movies, companions, and teachers, and the experiments he has made in the world about him determine the direction that his interests will take.

Some differences in interests are caused by differences in chronological age. If for no reason other than the desire for social acceptability, the boy of 16 must shun some activities that are quite appropriate to the boy of eight.

Other differences in interest are related to sex. The fact that parents tend to approve one type of play activity for girls and another for boys is especially important to younger children. A girl receives favorable recognition when she spends time with dolls, plays house, or learns ballet dancing, but a boy who does the same things finds that his security and self-esteem are threatened.

Since girls, on the average, reach maturity at an earlier age than boys do, they show an earlier interest in dancing and in other activities that involve the opposite sex. Also, individual differences in physical maturation among members of the same sex have a strong effect on interests. As we have seen, some boys of 14 are sexually mature and others are immature. For both boys and girls, the attainment of sexual maturity results in new forms of motivation and in new problems. It is reflected in their choice of reading matter, conversational topics, heroes, movies, and radio and television programs.

Actually, the specific interests that a child develops depend directly on how clearly he has been able to identify the types of activity that satisfy his motives. His desires for security, self-esteem, the esteem of others, and new experiences, and the success or failure that he meets in attempting to satisfy these desires, play a major part in determining what his interests will be. In other words, psychological motives, as well as physiological motives, are significant.

And once interests are formed, the habit motives tend to perpetu-

ate them. A boy may retain an interest in coin-collecting, fishing, football, or photography long after they cease to satisfy the motives that they originally satisfied. Habit motives and the desire to be with friends who have the same interests may be sufficient. Or, as we trace interests throughout life, we may find that an activity remains the same but that the motives satisfied by it change greatly. For example, a boy may take up golf because it makes him feel mature and because it has social prestige; as a young man, he gains group and self-esteem from his proficiency; later he continues the game for the business contacts that come from it; and still later he follows it for reasons of health and to satisfy habit motives.

As a teacher, you will need a deep understanding of what interests are typical of both sexes at each developmental level, and of the range of interests that you can expect to find within groups of the same age and sex. Then you can translate your information into specific, practical terms, such as the games, books, movies, and songs that will be most appealing to a particular group of children.

What techniques can we use to determine specific interests? And how can we use interests in developing an effective learning situation?

Leisure-time activities as a clue to interests. When children work and play under the direct supervision of adults, they have a natural tendency to display the interests they feel are expected of them. They are more interested in winning approval than they are in following their other inclinations. But in their freely chosen, leisure-time activities, they unwittingly provide us with valuable clues to what their interests really are. So you will want to take advantage of every opportunity to observe children after school hours, to talk with them about how they spend their evenings, and to enter into their social activities whenever you can do it unobtrusively and without embarrassment to the children and to yourself.

Try to find out what books they like to read, what radio and television programs appeal to them, what movies they go to, what friends they spend their time with, what hobbies they follow, and what they do when they are with the family group. In the classroom itself you can gain insight into children's interests by encourag-

ing them to exercise self-direction in attacking problems or in choosing assignments.

Each time you discover a new interest, remember that it has real importance in the life of the child. It represents to him a possible way of finding satisfaction for his motives and a solution to his problems. If you can manage to accommodate classroom activities to a real interest that the child himself has shown, you will succeed in creating a stimulating, effective learning situation. The secret is to enlist children's interests in the classroom rather than to oppose and reject them.

With the information you gather by observing children's leisure-time activities, you can do more than just appeal to their current interests. You can encourage them to enlarge and extend their interests in new, more rewarding directions. Since interests are the child's way of satisfying his motives, he will welcome sincere attempts to help him develop more satisfying activities. Of course, when you attempt to build up new interests, you will have to be much more careful than when you appeal to interests that already exist. But once a child has discovered that a new activity provides him with satisfaction, he will readily adopt it as a new interest.

Some suggestions

NEVER WORRY about *creating* motivation in children. Every child has a tremendous amount of motivation that he is eager to satisfy every hour of the day. If you can suggest desirable educational goals that appeal to the child's motives, and if you can give him frequent opportunities to succeed in his attempts to reach those goals, you will have harnessed one of the most powerful learning forces known.

Since frustrating problems are as essential to the learning situation as motives themselves, you will want to be careful not to remove every difficulty from the child's path. Problems are a necessary condition of learning. They must be great enough to call forth serious effort, but not so great that they lead to defeat and a retreat from important goals.

As you help children in their attempts to satisfy their motives, always remember that individual children vary in their ability to achieve. No child will strive after an impossible goal for very long. He must find his tasks challenging but not discouraging. They must be tailored to fit his individual abilities. By providing him with opportunities to succeed in winning security, self-esteem, the esteem of others, and new experiences, you will make the classroom the scene of significant learning.

Be careful about how you approach the needs and interests of the child. Your task is not so much to let each child do just what he wants to do, but rather to encourage him to strive for significant long-range goals by appealing to the needs and motives that he already possesses. In short, you will help the child to choose what he is to learn. You will not force him to do things that he finds objectionable, but you must guide him in the directions that the curriculum-maker and the school as a whole find desirable.

There is much for the child to learn, and only a short time in which to learn it. You can increase both the speed and the quality of his learning by appealing to the motives that he brings with him into the classroom.

Problems and projects

1. A man goes without lunch to save money for a new car. Another steals money from his employer to bet on horse races. The president of a large corporation works long hours and spends little time with his family. What motives and blocks are involved?
2. Try to analyze your own motives when you criticize others. Does your criticism tend to be harmful to them? To you? How?

Suggested reading

Thomson, Mehran K., "Motivation in School Learning," Chapter 9 in Charles E. Skinner (ed.), *Educational Psychology*. New York: Prentice-Hall, Inc., 1951, pp. 306-334. (An excellent discussion of motives and incentives as applied to the work of the teacher.)

Additional resources

- Hilgard, Ernest R., and David H. Russell, "Motivation in School Learning," *Learning and Instruction*, 49th Yearbook of the N.S.S.E., Part I (1950), pp. 36-68. (A general discussion of children's needs in relation to problems of the teacher and the administrator.)
- Kuhlen, Raymond G., and George C. Thompson (eds.), *Psychological Studies in Human Development*. New York: Appleton-Century-Crofts, Inc., 1952. Chapter 8, "Interest Patterns and Their Implications," pp. 245-284. (Reprint and discussion of five articles on interests.)
- McGeoch, John A., and Arthur L. Irion, *The Psychology of Human Learning*. New York: Longmans, Green and Co., 1952. Chapter 6, "Learning as a Function of Motive-Incentive Conditions," pp. 194-238. (An evaluation of research and theory in the area of motivation.)
- Miller, Neal E., and John Dollard, *Social Learning and Imitation*. New Haven: Yale University Press, 1941. Chapter 2, "Four Fundamentals of Learning," pp. 13-36. (Discussion of the function of drives, cues, responses, and rewards in motivating both classroom and social learning.)
- Snygg, Donald, and Arthur W. Combs, *Individual Behavior*. New York: Harper and Brothers, 1949. Chapter 4, "What People Strive For," pp. 52-77. (A discussion of human needs and how they are satisfied.)

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How we learn

The teacher must understand the basic principles of learning and forgetting. It is essential that he teach children how to learn effectively and that he create learning situations that result in the efficient acquisition and later use of the facts, habits, skills, and generalizations that the children master in the classroom.

One of the most pressing problems of education is to help students develop effective methods for learning. The school demands that the child spend many hours, many days, and many years in learning the subject matter, skills, and attitudes essential for effective living in a civilized community and for active citizenship in a democracy. Then the child goes on to spend many more years learning to be a teacher, a doctor, a lawyer, or a minister. In short, nearly everyone devotes a substantial portion of his life to being a *professional learner*. Yet, strangely enough, few are ever taught efficient learning procedures.

Is it because nothing is known about the learning process? Not at all. We know a great deal about it. We know that efficient methods of learning can cut in half the time required by inefficient methods. And we know that the speed with which material is forgotten can be greatly reduced.

As a professional teacher, you will use your knowledge of the learning process every day—for arranging your lessons and units, for deciding what materials and activities to include in them, for determining what materials you will assign for study and how you will assign them, for deciding how and when you will help the

child to review and to summarize what he has learned, and for preparing and scheduling examinations. And, though in the primary grades the child's minute-to-minute learning activities are carefully planned by his teacher, finally he must become able to learn independently. Thus you must teach each child *how* to learn most efficiently. You must teach him the best methods for learning how to spell words, how to develop speed and accuracy in multiplication and addition, how to learn his lines for a play, how to organize and learn the essential dates, names, and events in history, how to improve his skill in typewriting, baseball, or dancing, and how to improve his ability to read.

As you can see, you have two important professional uses for your knowledge of the learning process: (1) you will plan your classroom activities so that maximum learning takes place, and (2) you will teach the child how to learn effectively when he himself must plan his approach to the learning task.

You obtain personal as well as professional dividends from a study of effective methods for learning. You, as well as your students, will continue to learn throughout life. When you apply the principles of learning to your own study, you are likely to increase your professional competence. For example, would you expect someone to teach you to swim, to type, or to dance if he himself had never become able to swim, type, or dance? Ordinarily not. You would demand that he know more than the rules and theory of the skill. And so with a knowledge of effective methods for learning. You can best teach the child how to learn effectively and you can best use your knowledge of the learning process in building effective classroom situations if you first learn how to apply this knowledge to the learning that you must do yourself.

Fortunately, the best methods for learning are easy to master, and the time that they save us is ample payment for the few hours that we expend to become familiar with them. As with all new knowledge, though, mere mastery of efficient learning methods is not enough. We must put the effective methods into practice every day over a period of time before they will have any real effect in overcoming the inefficient learning habits that most of us have fallen

into. Inefficient habits are stubborn creatures; they hate to be displaced. Luckily, the children in your classroom will not have had so many years in which to build up stubborn, inefficient habits. They will have less resistance to adopting efficient habits and will be more likely to embrace the methods that give the greatest rewards for time spent on study.

The general nature of learning

So FAR, we have been talking as though everyone meant just the same thing by the word "learning." True, we all have a fairly clear idea of what the term means, but, as we have discovered before, a precise definition helps us to direct our thinking more accurately. A definition is especially necessary here, since the word learning is so often used to include the effects of maturation as well as the effects of the more conscious, controllable act of learning itself. Thus, we speak of the child's "learning" to walk, but we should recognize that walking is dependent upon maturation as well as upon learning.

What we mean by "learning." Learning is the acquisition of new behavior patterns, or the strengthening or weakening of old behavior patterns, as the result of practice.

As we can see, learning includes a wide variety of changes in behavior. The changes may be readily detected in the overt behavior of the individual or they may be changes in his stock of ideas. Even a primitive, uncivilized person learns nearly all those actions that enable him to obtain food, clothing, and shelter and to communicate with his fellows. And civilized man learns in addition all those actions that make him different from a primitive man. Our methods for getting along with others, our ability to read, to write, and to use mathematical symbols, our skill in games, our health habits, our attitudes, and our control of our emotions—all are learned.

In our definition, we need to require that the changes in behavior occur as a result of practice so that we can eliminate those

changes that result from physical growth and maturation. However, we recognize that much of what we learn is learnable only after we have reached an adequate level of physical and mental maturity. And though mental or physical action—practice—is a necessary condition for learning, practice alone does not cause learning. Practice may or may not produce changes in behavior patterns. What, then, are the important determinants of the amount of learning that will take place? Let's examine the learning process.

—The learning process. Motives or drives (which we discussed in Chapter 7) are fundamental to the learning process. If we are to learn, we must first have some goal and then encounter some block that prevents us from attaining that goal. If we encounter no block—no difficulty of any kind—the chances are that we have already learned the behavior necessary to reach the goal or that we will not learn it until our goal becomes more attractive and more demanding. The block or problem, then, rather than the number of repetitions of the experience, is the essential element in the learning situation. When we consider how little we learn from certain of our experiences, this becomes obvious. We may enter a building many times and be able to recall little concerning the doorway, steps, wall, or floor.

The child or even the adolescent may eat with his fingers and chew with his mouth open. So long as this behavior is adequate to meet his needs, years of practice result in no improvement in his table manners. But if he becomes aware that his behavior blocks his attainment of esteem in the eyes of his peers, and if he sees that he can regain their esteem by changing his habits, he strives hard to change and he learns rapidly.

When a child is frustrated in his attempts to reach an attractive goal, he changes. His muscular tension increases; he is less comfortable and less relaxed than he was before the block arose. He seeks a solution. Either he must destroy the block, climb over it, go around it—or find a new goal. He may simply try out one route around the block to his goal and, if that fails, try another. Or he may make intelligent use of his past experiences. If, as a direct, or accidental, result of his trial-and-error behavior, he overcomes the

block and reaches the goal, his search is ended and his muscular tension is reduced. He learns in two ways from this experience: (1) he learns how to solve his present problem, and (2) he learns a *procedure* for attacking future problems. What is there in this experience that is important to his future learning procedure? Simply this: The last attempt the child makes—the attempt immediately preceding success and the lessening of tension—is the one that he is most likely to repeat the next time tension arises, especially if either the goal or the block is similar to those he encountered in this problem.

For example, consider the baby who receives attention or food only when he cries. He soon learns to cry regularly in response to any problem that he encounters. Or suppose that a boy has a strong desire to get on the school football team. He is motivated by his need for the esteem of fellow students and also by the interesting experiences that he may enjoy. But he is blocked by his inadequate size and lack of skill in dodging, tackling, and handling the football. His past experiences and general intelligence will determine the extent to which his attempts to solve his problem are planned or random. His personality and the length of time that elapses before he sees a solution will determine the extent of his general tension. But there will be some tension and it will increase if his search for a solution fails. He has several possibilities for reducing his tension. He may choose a substitute goal, convince himself that it is worthy, and gain esteem and new experiences from it. Or he may make a direct attack on the problem. He decides that he can gain weight during the summer by eating heavily and that he can become stronger by doing heavy lifting. He gets a football, rigs up a tackling dummy, and practices the fundamental skills that are required. Then, when the football season begins, he attempts to make up for his inexperience by trying particularly hard.

If his efforts are successful, when he is faced with a similar problem in the future he is likely to adopt the same general type of attack that was successful in solving this problem. Why did he try so hard and why did he learn so many things? Because the

flected by the lower branches of the tree, that climbing trees is hard on clothes and brings disapproval, and that his brother once retrieved his fish line from a tree by using a fishing pole. In fact, his past experiences and general ability to see relationships may allow him to see the correct solution without trying inadequate solutions. }

Our first or our thousandth manipulation of ideas or attempts at motor solutions may be successful. And, through the manipulation, our ideas take new forms—we learn. Likewise, idea manipulation and motor attempts may be, and quite likely will be, going on at the same time. Then the learning comes from a combination of the ideational and the motor attempts.

Some scientific background

LABORATORY experiments have produced valuable data on learning and forgetting. Though most of the laboratory experiments have used relatively meaningless (nonsense) materials, the findings help us understand what takes place in the learning and forgetting of the meaningful materials of the classroom and of life. Actually, the basic difference between the meaningless materials of the laboratory and the meaningful materials of the classroom is that in the classroom we deal with situations that are similar to those we have encountered previously. That is what makes them meaningful. If we were not already familiar with it, the combination e-a-t used in the classroom and the nonsense syllable j-i-x used in the laboratory would be equally meaningless. And if we had not already had considerable experience with finding our way on country roads or city streets, the problem of learning our way about a new city would be as meaningless as the laboratory problem of learning our way through a maze.

For these reasons, a knowledge of some of the findings of the psychological laboratory can form a useful basis for a discussion of the learning of meaningful materials.

Learning curves. Learning curves usually are drawn on a graph, with the base line divided into units of time or the number of trials required for learning. The vertical scale is divided into appropriate

units of accomplishment—puzzles solved, material retained, and so on. The curve drawn against these two scales gives us a handy way of comparing, for example, accomplishment at the end of various time periods.

Learning curves that report the learning activity of one person over a relatively short time are likely to be very rough, since drastic changes may be caused by accidental distractions or temporary loss of motivation. If we want to get a stable, meaningful picture, we have to take the learning achievement of many persons (or of one person on many different tests), find the *average* achievement at the end of each trial or time period, and then make a graph based on these averages. Figure 1 shows some typical learning curves that were obtained by this method.

The first curve in Fig. 1 rises rapidly at first, but more slowly

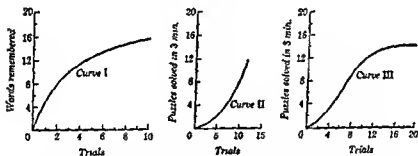


FIG. 1. Some typical learning curves.

with successive trials. The second starts out slowly and then suddenly seems to shoot up to mastery. The first is said to be negatively accelerated, and the second positively accelerated. The third curve, which involves a combination of these two, is called an S-curve.

Let us look at the first (negatively accelerated) curve, which shows what happens when a child tries to memorize a list of words. On the first memory test, he is able to recall five of the words. On the second test, he recalls eight; on the third test, ten. In terms of increase, this is five new words on the first test, three on the second, and two on the third. But on the second test, not only has he learned three new words; he also remembers the five that had

already been credited on the first test. On the third test, he has learned two new words, and has remembered the eight credited on the second test.

The second curve is a record of attempts to solve a series of wire puzzles all of which are solved by similar procedures. The first attempts are crude, and solutions are worked out largely through trial-and-error manipulation of the parts of the puzzle. However, the time required to solve each puzzle gradually lessens, because we become more skillful in manipulating the wires and because we tend to repeat the movements that lead to success. At last, when we realize that the same general principle is involved in all the puzzles, we are able to solve them quite rapidly.

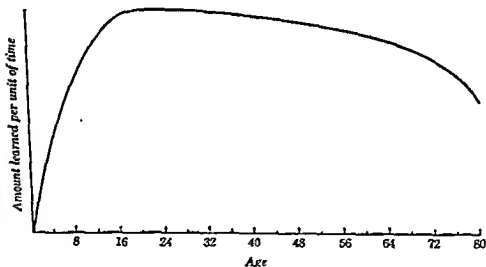


FIG. 2. Relationship between age and ability to learn new materials.

However, if we continue to record our solutions of the wire puzzle, curve two will become the S-curve and finally, as we attain maximum speed, improvement will cease altogether and the curve will parallel the base line.

Age and learning ability. Is there a best age for learning? For a long time it was believed that certain ages were best for learning poetry but that other ages were better for learning, say, arithmetic or geography. Many studies have been made of learning ability

and its relation to the age of the learner.¹ Figure 2 gives us in simple form the results of a compilation of these studies.

It appears that the ability to learn new and unfamiliar materials increases until about age 16 and then remains very nearly the same until the late 20's. Then there is a slight drop with each year, until at about age 70 the drop becomes rather sharp. The sharp drop occurs when senility, sometimes called *second childhood*, is reached. We must be cautious in interpreting this graph, however. Remember that it represents the average for a great many persons. The learning ability of some individuals, especially those who are engaged in activities that require the learning of new materials, may continue to increase far beyond the age of 16 and may not decline until much later in life than is shown to be the lot of the average person. The beginning of senility in individual cases may come at a much earlier or much later age than that indicated on the graph.

Moreover, Fig. 2 is a picture of ability to learn *new* materials, whereas in learning outside the laboratory we seldom encounter completely new materials. (Remember our discussion in Chapter 6.) Consider the learning tasks that you are called upon to face. Figure 2 would indicate that you could perform these tasks as well at age 16 as you now can. But you know that this is not true. You can understand scientific concepts and you can solve problems of dealing with adults—you can learn—at a level far beyond what you could at age 16. Why is this true? Obviously it is because of what you have learned *since* you were 16. The situations you now meet contain far fewer *new* elements than they would have had if you had been forced to meet them at age 10. We have here a basic principle of education. The average child, at a rather early age, ceases to increase in sheer mental power. But if we can help him to gain an ever-increasing background of skills, knowledge, and social experiences, we prepare him to handle problems of ever-increasing complexity.

How is this curve of learning ability useful to us in the classroom? It shows us how the ability to learn new materials tends to rise from

¹ For a discussion of such studies, see James B. Stoud, *Psychology in Education*. New York: Longmans, Green and Co., Inc., 1940, pp. 428-433.

infancy to maturity. It tells us that the average 14-year-old child can learn new materials *of any kind* faster than the average 10-year-old can.

But obviously we cannot wait until the time of maximum learning ability before we introduce the child to the school curriculum. There is too much for him to learn, and much of the learning demanded of the 16-year-old depends directly on what he has learned years before. Certain types of learning, such as writing, playing a piano, singing, swimming, and dancing, involve motor skills as well as mental development. If the child fails to begin to learn such skills at an early age, special muscle groups may not be developed and coordinated by the time that he reaches his maximum learning ability. In addition, if he is to attain great skill in such activities, he must continue to practice for a long time after the basic learning has been achieved.

And there are other factors to consider. The young child who is interested in playing an instrument or skating will devote more *time* to learning these skills than will the average older person. By distributing his practice time over a number of years, he will attain greater mastery than if he had begun only after he had reached maturity. In the classroom, then, we must work with children who have not yet achieved their maximum ability to learn new materials. Yet their success after they have reached that maximum depends largely on how rich their previous learning has been.

The elements of efficient learning

ALTHOUGH MOTIVATION and learning ability are important determinants of learning efficiency, other factors also have a strong influence. Fortunately, nearly all these are factors over which we can exercise some control in the classroom.

The value of recall. Effortful recall is a powerful determinant of learning and retention; it pays tremendous dividends per unit of time consumed. One of the important values of a good examination is that it requires recall or an attempt to recall. Similarly, classroom

discussion requires the student to recall previously learned information and to apply it to new problems. Recitation is an important method for inducing recall. The teacher uses the recitation to clarify and strengthen learning and the skillful student uses it in his independent study. Recall also takes place when the learner rehearses mentally the physical movements demanded by a game or skill. And review, though it often includes new learning, owes much of its effectiveness to the recall of information that already has been learned.

TABLE 1 *The effectiveness of time spent in reading vs. various proportions of time spent in recall during the study of biographical sketches as measured immediately after learning**

Percentage of Time Spent in		Scores†				
Recall	Reading	Grade 8	Grade 6	Grade 5	Grade 4	Grade 3
0	100	88	89	80	86	75
20	80	95	98	95	100	89
40	60	105	106	104	97	97
60	40	105	104	100	111	122
80	20	107	105	105	104	113
90	10	100	98	107	102	104

* From Arthur I. Gates, "Recitation as a Factor in Memorizing," *Archives of Psychology*, VI, No. 40 (1917), pp. 1-104.

† To make it easy for us to compare the learning that took place under each of the six methods, the experimenter computed the average score made by the pupils in each grade under all six methods and called that 100. Thus a score of 88 (average score for grade eight using no recall) is seen to be only 88 per cent as effective as the average under all methods and 88/107 as good (about 82 per cent) as the score when the pupils used 80 per cent of their time for recall.

Ordinarily, recall results in a highly motivated form of additional practice with a special problem introduced—that of attempting to reconstruct a situation from our ideas alone. The educational psychologist sometimes refers to recall as "study with the book closed."

An experiment performed many years ago indicates that when

the learner alternates between reading and recitation he is far more successful than when he uses all his available time for reading alone.² Other investigators have reported similar findings.

We can see by Table 1 that in each grade, when the children spent from 40 to 90 per cent of their study time in attempting to recall the material, they made far better scores on a test given immediately following the learning than they did when they spent all their time reading the material. The material studied by each grade was of the same general type—highly factual biographical sketches. However, the students in the upper grades had longer and more difficult sketches than did the students in the lower grades. We can see that a test following learning shows that recall was very effective indeed. What about the retention of such material

TABLE 2 *The effectiveness of time spent in reading vs. various proportions of time spent in recall during the study of biographical sketches as measured about four hours after learning**

Percentage of Time Spent in		Scores				
Recall	Reading	Grade 8	Grade 6	Grade 5	Grade 4	Grade 3
0	100	80	74	71	79	62
20	80	96	79	81	95	76
40	60	127	113	104	100	107
60	40	131	123	122	116	123
80	20	129	119	107	107	117
90	10	121	102	115	102	114

* From Gates, *op. cit.*, p. 49.

when a test is given at a later time? Table 2 reports the scores made by these same students on a second test given from three to four hours after the test reported in Table 1.

Table 2 indicates that recitation did much more than increase

² Gates, *op. cit.*, pp. 1-104.

the speed of learning. Materials thus learned were much better remembered than were materials learned through reading alone. The recitation, then, reduced the time needed for learning and increased the persistence of learning. Why? There are several reasons.

First, the conscious use of recall during the process of study demands that the act of reading be effortful. It prevents the reader from letting his eyes dance lightly along from word to word while he focuses his thoughts on last night's party or tomorrow's football game. It holds his attention to the business at hand. It obliges him to set specific goals and to make an immediate evaluation of his progress toward them.

Second, recall that is followed by a re-reading gives the learner a chance to check immediately on the accuracy of his learning. Correct information is confirmed and incorrect information is rejected.

Third, recall requires greater muscular activity than does reading alone. As the learner tries to repeat the material, often in his own words, he tends to use at least his throat muscles in the process.

Fourth, when the learner recalls material by himself he builds up confidence in his ability to recall it at a later time. There is less chance that panic will rob him of his learning when he tries to draw on it for an examination or a real-life situation.

Here is a particularly good example of how we can use our knowledge of the learning process both to teach children how to learn and to build effective learning situations. For example, the child should be shown (probably as early as the second or third grade) that the most effective way to study spelling is to read each word carefully with close attention to how it is spelled and then to get someone else to pronounce the words while he writes them. Or, if he cannot get someone else to do this, he can cover a word with a card and write it after a quick glance at the word. Later on, the children are taught to make liberal use of recall for learning poems or lines to a play. And in the process of work-type reading, the child is taught to read a paragraph and then to test himself over the content. The teacher, of course, can provide for

recall in many ways—examinations, summaries by the child, and class discussion, to mention a few.³

The advantages of distributed practice. In any learning situation, the amount of study time available is limited. What is the best way to use it? If Mary has five hours a week to spend on learning a given assignment, should she spend it all at once, space it into five equal parts of one hour each, or work out some other arrangement?

This is a hard question to answer. No one solution is satisfactory for all types of learning tasks. There is evidence, however, that for most learning activities a certain amount of practice spread over a period of time is much more effective than the same amount of practice crammed into a short period of time. In learning motor skills, such as typewriting, skating, or dancing, far better results are obtained through spending a few hours each week for a number of years than by spending five times as many hours per week in one-fifth the same number of years. And the effectiveness of the more gradual learning seems to persist for a longer time after the practice has ended. However, if sufficient motivation is present, and if the child does not become tired of the task, he will obviously achieve more learning in 30 minutes than in 15.

Certainly if the learner's goal is to achieve permanent mastery of meaningful materials, he will secure better results through distributed practice than through massed practice. However, forgetting takes place rapidly after any type of learning. So if the learner's goal is merely to pass a test at some definite future date, he will obtain the best results by using the total available time shortly before the test. That is one reason why "cramming" before an examination is so popular. Cramming is the result of a short-term philosophy of learning that some students have developed and that poor teaching procedures have encouraged. So far as results measured on the test are concerned, massed practice is definitely the most economical technique. The results of the prac-

³ Since Chapter 9 is devoted to the application of learning principles in the classroom, in the present chapter we will not make a detailed analysis of how you can use these principles.

tice are fresh in the student's mind, and the student is highly motivated by the knowledge that *this is the last chance he has to learn before the hour of reckoning.*

In terms of permanent values, however, cramming is disastrous. The student whose aim is only to reach an immediate goal is already disposed to forget what he has learned as soon as it seems safe. As a result, he finds that the courses and examinations he encounters in the future are based on material that is less and less meaningful to him, since he fails to retain what he has learned in the past.

In planning the effective learning situation, the teacher must make numerous decisions concerning the most valuable use of classroom time. Sometimes, as in the case where a school play is to be given or a poem is to be learned, interest would be lost if the learning were spread over too long a time. But for most classroom learnings, we can distribute practice advantageously. By using frequent short examinations rather than infrequent longer ones, we can guarantee that practice will be spread over a longer period of time. And we distribute practice as well as encourage recall when we see that the child uses previous learning to attack new problems. For example, in the primary grades we teach the child to use initial sounds and endings of words as a cue to pronouncing new words. Rather than spending a long period of time in learning all these sounds, the effective teacher distributes their learning over many weeks, introducing one initial sound every day or two and seeing that the child develops his understanding of them by letting him give the initial sound and the ending of words that he does not recognize. The teacher will find that distributed practice is particularly effective when a rather large unit of material, such as the atomic weights of the various elements studied in a chemistry class or the vocabulary of a foreign language, is to be learned.

The influence of mental set. An active intent to learn is much more likely to result in success than is mere passive attention. We may ride the same bus to and from school for many weeks, watching the houses along the way or even sitting beside the driver.

Yet, if we were called upon to take the wheel and to follow the usual route, we would encounter difficulty. Had we been at the wheel during the first trip and forced to find our way, and had we known that we would be called upon to repeat the trip at a later time, we would have learned the route much more quickly. Similarly, if we read one book with the knowledge that we will be tested on it the next day and also a year later, and if we read another with the understanding that we will be tested on it the next day only, our memory of the material from the first book will persist for a longer time.⁴

There is another way in which mental set affects the student's learning. Students approach their study in different ways. One decides to study a lesson for two hours; merely putting in the time becomes his primary objective. His attention focuses more on the clock than on his lesson. Another has specific purposes to accomplish during his study. He is searching for questions that may be asked on the material or he is attempting to condense the material into his own words. The mental set of the latter certainly is far more conducive to effective learning.

How we forget. If there were no such thing as forgetting, the task of the learner and of the teacher would be simple indeed. But the problem of forgetting dominates the whole process of learning. Some forgetting even takes place during the actual learning of material. The learning curves that we talked about before are influenced by the process of forgetting. If they were not, it would be as easy to learn five new words the second five minutes of learning time as it was the first five minutes. But we find that not only must we learn new things but we must also remember, re-learn, or keep from forgetting the old. Names we know today are gone next year, and the facts we knew last night have vanished before today's examination.

Early studies of forgetting served to illustrate the size of the

⁴For a review of the experimental evidence on mental set, see John A. McGeech and Arthur I. Inon, *The Psychology of Human Learning*. New York: Longmans, Green and Co., 1952, pp. 223-228.

problem. The results of one of these studies,³ known as the Ebbinghaus curve of forgetting, are shown in Fig. 3.

Ebbinghaus derived his curve from experiments in which he was both the observer and the learner. To simplify his task, he



FIG. 3. The Ebbinghaus curve of forgetting.

invented what is known as the nonsense syllable, which consists of a vowel between two consonants, such as x-o-y, j-u-b, or c-i-z. He arranged these syllables into lists of various lengths. He studied a list, recorded the date, hour, minute, and the number of readings that were necessary before he was able to repeat all the syllables (through spelling them out), and then laid the list aside. He followed the same procedure in learning list after list. From time to time, he tested his memory of the lists he had previously learned. Since he never learned a list beyond the level necessary to repeat it once, and since in the meantime he had learned other lists, ordinarily he could not remember any of the syllables in an earlier list until after he had re-read it at least once or twice. It began to appear that he remembered nothing! However, when he tried to

³ Hermann Ebbinghaus, *Über das Gedächtnis*, Leipzig, 1885. Translated under the title of *Memory* by H. A. Roger and C. E. Bussenius. New York: Teachers College, Columbia University, 1913.

relearn a list, he found that he was able to master it much more easily than he could master a list he had never learned before. This was an indication that he had not completely forgotten it.

In order to determine how much was left of his original learning, Ebbinghaus used what is called a *saving score*. If he required 25 readings to learn a list, and 15 to relearn it, he assumed that he had saved the results of 10 readings, or 40 per cent of his original learning effort. In making a graph of his memory of this list, he would say that he had made a saving score of 40.

Ebbinghaus' study was published in 1885, long before most areas of psychology had developed highly scientific methods. It is a classic example of careful and thorough experimentation. Even with other types of material, either meaningful or nonsense, the general *shape* of the Ebbinghaus curve is still found to apply.

We should not conclude from the Ebbinghaus curve that during the 20 minutes after learning we forget 40 per cent of meaningful material, or that we forget 80 per cent by the end of a month. The important fact is that we do forget at a relatively rapid rate immediately following learning and at a much slower rate as time goes on. If we can determine the amount we have forgotten at some specific time after learning, we can estimate how much we would have forgotten during some longer or shorter period of time. For example, if approximately 60 per cent (20 minutes for Ebbinghaus' materials and methods) of meaningful material is remembered at the end of a month, we might predict that without review 42 per cent (60 minutes by the Ebbinghaus curve) will be recalled at the end of three months.

Many factors contribute to the high percentage of forgetting observed by Ebbinghaus. These factors will be discussed in greater detail under their individual headings later in the present chapter and in Chapter 9.

Why we forget. For many years, it was customary for psychologists to say that forgetting was caused by *disuse*. But scientific attention to the problem, especially during recent years, indicates that *disuse* is far from being the cause or even a cause of forgetting.

As time passes, wood is eaten by termites, houses are consumed

by fire, people grow old, and men forget. However, none of these changes is caused by the lapse of time. Granted, if termites are present they consume more wood in two years than in one. But the termites rather than time consume the wood. To attribute any of these changes to the lapse of time is to fail to recognize the true cause-and-effect relationship.

Almost all psychologists now agree that interference is the cause of nearly all our ordinary, day-to-day forgetting. Both past learnings and future learnings interfere with the memory of what we learn today. The interference is much greater between some types of material and for some methods of learning than it is for others. What conditions determine the degree to which one learned act interferes with another?

Similarity of materials. When we were talking about Ebbinghaus, we mentioned that one reason he forgot a large proportion of the nonsense syllables he had learned was that between the time of original learning and the time of recall he studied many new lists of nonsense syllables. Materials that we learn just after or just before we learn similar materials are particularly likely to be forgotten. Suppose that on Wednesday the children in your classroom learn the poem "America." Ordinarily, you could expect them to remember most of the poem on Friday. However, if on Thursday they learn "The Star-Spangled Banner," they will remember "America" less accurately than if they had not studied the second poem. Moreover, they will remember less of the second poem than if they had not learned the first on Wednesday. Had one of the poems been humorous rather than serious, or had one been sung and the other spoken, the degree of similarity, and, consequently, the amount of interference between the two would have been reduced.

Degree of learning. Another important factor that influences forgetting is the degree to which material has been learned. If one poem is learned thoroughly over a period of a few days, it is not likely to be forgotten when a second poem is learned. Here is a strong argument for thoroughness in learning. Thoroughly learned materials are less easily interfered with and consequently are remembered better than are partially learned materials. In addition,

well-learned materials do less damage to other learning, past or future, than do poorly learned materials. And we can see why this would be true. As we become acquainted with them, two brothers, two buildings, or two poems become less similar. We become increasingly aware of the differences between them.

The value of review. Careful review is a valuable aid to memory, particularly when it is begun soon after the initial learning.^{6,7,8} Figure 4 illustrates how the shape of the curve of forgetting is

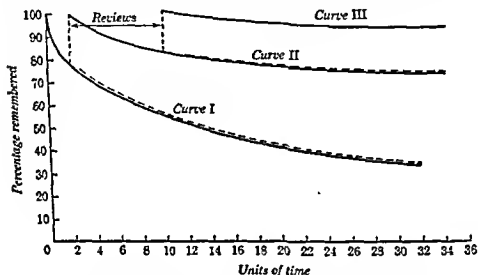


FIG. 4. The effect of review on the curve of forgetting.

changed by review. Curve I (which you will recognize as the Ebbinghaus curve) shows the rapid decrease in the percentage retained during the period immediately following initial learning. Curve II shows how the curve is altered when the material is reviewed to the point where it is as well remembered as when it was first learned. Curve III represents the still slower drop that takes place after a second review.

⁶ H. F. Spitzer, "Studies in Retention," *Journal of Educational Psychology*, XXX (1939), pp. 611-659.

⁷ A. M. Sones and J. B. Stroud, "Review, with Special Reference to Temporal Position," *Journal of Educational Psychology*, XXXI (1940), pp. 665-675.

⁸ H. R. Tiedman, "A Study in Retention of Classroom Learning," *Journal of Educational Research*, XLI (1949), pp. 516-531.

The first review should take place soon after learning, in order to avoid the great loss that takes place during the initial period of rapid forgetting. To be most effective, a review must be more than a second exposure to familiar material. It should provide for recall or an attempt to recall followed by an opportunity to confirm or reject what is recalled. But it goes beyond this. Although no new materials are presented, during a review the child learns many things for the first time, since he will seldom have learned all that is available during the previous exposure. In addition, new applications and understandings will be developed during the review.

The summary near the end of the class period, the review of yesterday's accomplishments before the beginning of today's problem, the examination, and the use of previous learnings to attack new problems—all are review activities that are under the teacher's control. And you will teach the child to review independently. You will teach him how to organize what he has learned and preserve it in notes and you will teach him how and when to review those notes. If you teach in the junior or senior high school, you may help the child to make a schedule of his study time. In such a schedule, time should be allowed at the end of each evening's study for a review of today's class notes and of the preparation that he has made for tomorrow's work. Also, an hour or two each week should be identified for the review of all the course notes for the semester or the year. When supervised study time is available, we schedule a regular portion of it for review and we have review lessons in our classroom whether or not we supervise the child's study. Frequently, we use such a review lesson before we begin a new unit.

Combining sensory experiences. Do we learn best by seeing or by hearing? The evidence is not entirely clear. There does, however, appear to be abundant evidence that the more sense organs we can use in the learning process, the better we will retain the material.

Hearing and seeing are better than either alone; and hearing, seeing, and saying the words that we hear are still better. One reason may be that when we undergo an experience through a

combination of the senses it is more nearly unique and thus has fewer similarities to other learning situations. By emphasizing the ways in which an experience differs, we can reduce the amount of interference with other learning experiences. For example, if a poem is to be learned, we can get different types of sensory experiences from hearing a recording of it as read by its author, from singing it individually and in a group, from reading it aloud, and from reading it silently.

The combining of sensory experiences is not limited to obtaining experiences from different senses. We can also obtain different experiences through the same sense. Motion pictures greatly extend the visual experience that a child can gain from his reading of geography, history, and literature. And he can combine his reading with many other sensory experiences. Classroom collections of insects, textiles, manufactured products of oil, iron, or coal, and visits to zoos, factories, and farms will reinforce learning through introducing touch, smell, and an entirely new visual and auditory experience.

Guided learning. Experiments have been conducted in which students were carefully prevented from making mistakes. For example, in teaching a child to write the letters of the alphabet, we might cut stencils of the letters so that by tracing with his pencil he will always obtain perfect letters. If we are teaching a boy to jump over a bar, we might tie him to a machine that would force his legs, arms, and head through exactly the right motions of the most approved type of roll. Such guided learning might conceivably be used to teach many different motor skills. Psychologists have tried to discover whether or not it is desirable to prevent errors in this manner. The conclusions are that it is *not*. Although the child may learn to trace perfect letters time after time, he will not necessarily show any improvement in his ability to write freehand. We must learn about our errors and how we can avoid them as well as learn the correct responses.

Obviously, we need to have examples of excellent performance both in the learning of skills and in our social learnings. We need to see how a good jumper or basketball player performs; we need

to see graceful and correct social behavior. But much of our learning time must be given to the recognition and elimination of our own errors—errors that are peculiar to us and that the examples seldom bring to our attention.

This is a concrete application of the principles of motivation that we studied in Chapter 7. The problem is an essential part of the learning situation!

The laws of learning

WE HAVE STUDIED why and how people learn. We have examined many conditions that are favorable to learning and retention. Can we now identify common elements in the learning situations that we have discussed? Actually, psychologists long ago attempted to do this. Certain principles or "laws" of learning have been identified. You can gain a better understanding of the learning process by studying these principles, but if you merely memorize them as pat statements, they will be valueless to you in the classroom. However, if you orient your thinking around them, and use them as points of reference, they will help you to organize your knowledge of the learning process.

The law of effect. When a response to a situation is accompanied or followed by a satisfied feeling, that response tends to be repeated; but when it is accompanied or followed by an unsatisfied feeling, the response tends to be eliminated.

We have seen many of the applications of this principle. Our motives demand satisfaction. And when we are able to satisfy them, we have a pleasant, satisfied feeling. When we fail to satisfy them, we have an unpleasant, unsatisfied feeling. We tend to adopt—to learn—any behavior that leads us to goals that satisfy our motives. We tend to eliminate any behavior that fails to lead us to a desirable goal. And we tend to eliminate behavior that results in threats or punishment.

How does this law account for the many unpleasant tasks that we learn to perform? As we have seen, human needs are extremely complex. Our actions are seldom energized by a single motive. In

striving to attain large goals, we often must identify and reach smaller, more immediate goals. Although our behavior at any time may conflict with certain of our motives, we retain this behavior if it satisfies other more powerful motives. And although a goal that we seek may itself appear unpleasant, actually it attracts us, for it marks a point on our journey toward some very attractive goal. For example, a child may find a scolding or even a spanking rewarding if it gains for him the much more important attention that he has been denied; a boy may find the rough physical contact of football or boxing satisfying in spite of the pain; and a girl may deny herself social engagements that she craves if in so doing she attains great satisfaction from good grades, the promise of a career as a singer, or the earning of money.

The law of exercise. When a connection between a situation and a response is repeated, the connection is strengthened, other things being equal; but when the connection is not used over a period of time, it is weakened. (This law is sometimes called the law of "use and disuse.")

The Ebbinghaus curve of forgetting demonstrates how this law operates when the connection is not used over a period of time. The value of review, and even the fact that learning takes place with practice, illustrate how the connection is strengthened by use. Note that the law does not say that the disuse causes the forgetting. If the connection is not repeated now and then, something happens that leads to a weakening in the connection. And we know that the repetition of the connection—the practice—does not necessarily lead to improvement. But when a response is repeated time and again, it does tend to become habitual. The child who is taught to brush his teeth following each meal finally comes to brush his teeth without being told and even feels some tension if he is prevented from doing so. However, if for some reason, he does not brush his teeth for a period of time, the habit dies. If a child meets numerous social situations in a friendly and relaxed fashion, that approach finally becomes a well-established personality trait. If he withdraws from one social situation after another, that trait too becomes habitual.

difficult skills and concepts. And though the dull child learns less rapidly than the bright child of the same age, he too can learn and learn thoroughly. Since he must have more time, however, we must give him less that is new each day.

Frequency—The more often a child encounters a given body of material the more likely he will be to remember it. Notice how this rule is used by advertisers. A supposed characteristic of a product—an advertising slogan—is repeated many times on the same radio or television program. And then this same slogan appears on billboards and in newspapers and magazines. Politicians and propagandists use this same principle. What they wish to have believed they state again, and again, and again! When we teach a child a new technique—the use of percentage, for example—we provide him with a number of problems all involving the same principle.

Recency—The more recently a child has studied new material, the more likely he will be to remember it. The child learns to review before an examination, we review our notes just before making an oral report, the pianist reviews a selection that he is to play in tonight's concert—in each case more to have the material fresh in mind than to gain new learnings or greater skill.

Contrast—The more strongly one portion of a situation contrasts with another portion of the situation, the more likely a child is to remember it. Thus uniqueness of a part of a situation as compared to the remainder, or of one situation as compared to other situations, is an important factor in our learning of it. We remember a situation if it is different from those we usually encounter; we remember people who are different from others in the group. A part of the value that comes from using visual and auditory aids in our classroom situations comes from the fact that they make each situation stand out as different from others.

Vividness—The greater the impact of new material on the child, the better the chance that he will learn it. In the classroom we ordinarily use a sensory impact, though in life situations the vividness may come from the extreme pleasantness or unpleasantness of the experience. The advertiser uses color, loudness, music, and

humor to give vividness to his message. The effective teacher makes learning vivid with motion pictures, recordings, colored charts, and three-dimensional models. His students perform experiments, learn in a social setting, go on field trips, see government in action, make collections, and prepare exhibits.

One important qualification: These general rules of learnability hold *only* when other things are equal. For example, a child may remember very *vivid* material that he studied many months ago much better than he remembers dreary, uninteresting material that he studied as *recently* as yesterday. When we say that material to which we have been exposed twice is more likely to be remembered than material to which we have been exposed but a single time, we imply that both materials possessed the same or nearly the same degree of recency, duration, vividness, and contrast.

The general transfer of learnings

HOW DO LEARNING experiences in the school prepare children to solve the problems they will meet in later life? How successful are human beings in transferring the material they have learned in one situation to another?

At one time it was assumed that the function of education was to provide exercise for the mind. The idea was that schooling would strengthen the mind and prepare it to meet successfully any problem that might arise. What was learned in school was considered less important than the *exercise* required in learning it. Solving unusual problems in arithmetic, learning to spell difficult words, and memorizing selections in Latin and Greek were accepted as educationally worth while, not because the problems, the words, and foreign language would be valuable to the child, but because it was believed that his memory could be sharpened and his reasoning ability would be developed in the process of mastering them.

We have discovered that education is not as simple as that. A child may memorize a thousand poems, yet his memory of what

he reads in his books and sees in the world about him will not be improved in the least, and he can solve thousands of difficult mathematical problems with no improvement in his ability to solve social problems.

We now recognize that the materials to be learned in the school must be selected on the basis of their ultimate worth in preparing the individual for life. And we know that to make these materials most available to the child when he needs them, we must make the situations in which the child learns as life-like as possible. To be able to solve new problems in later life, he must not only know many things, he must recognize which of those many things applies to each problem. For example, we know that if the child is to remember and *use*—transfer—what he learns about percentage when he later is called upon to decide what interest rate he is to pay for a so-called "easy-payment plan," he must have learned percentage and how it applies to life situations. He must be given far more than the rules to memorize and meaningless exercises to solve. We know that if he later is to become able to talk effectively to a group of his fellows, he must practice speaking in a social situation—memorization of grammatical rules alone is inadequate.

As you can see, to provide for maximum transfer we cannot make the learnings of the classroom ends in themselves. We must select the materials, skills, and habits that we will teach the child on the basis of their value to him in meeting his life problems. We know that if they are to be retained and used, learnings must be taught in a setting that is as near as possible to the life situations that he is preparing to meet. The learnings of the classroom must have *belongingness* in life situations.

This places a great deal of responsibility on us as teachers. And it has resulted in tremendous changes in curriculum and general teaching procedures. For example, we now teach the child to spell only those words that he will most often use. And we teach spelling in a situation as like as possible to the life situations in which he will use it—he writes the words rather than spells them orally and he uses them in sentences, pronounces them, and knows their

meaning. We take this same approach in all our teaching—we select those materials, attitudes, habits, motor and social skills, ideals, and standards of life most needed for a happy and productive life and we teach them in a social situation.

Thus our modern school curriculum includes only such learnings as have maximum value for life, and the professional teacher sees that the child learns in problem situations and not by rote.

Conclusions

IN THE PRESENT chapter we have studied the learning process itself. We have a professional need for a knowledge of the learning process as a basis for the building of effective and efficient learning situations. And we must teach the child to learn effectively when he approaches learning problems without our guidance.

The general principles will of course be the same whether the child or the teacher decides the learning procedure to be used, for always it is the child who must do the learning. But let's summarize the conditions that are most favorable to maximum learning and retention.

The problems that the child solves as he strives to reach goals are the core of the learning process, because only through meeting problems does he change his behavior. If we can set goals that challenge the child yet appear attainable, we are assured that he will meet problems. And we teach him to set goals for himself—to make questions on the material that he studies, to outline, to take notes, and to develop special interests and to pursue them.

Recall is a powerful aid to learning. We plan our lessons and units to make maximum use of recall and we teach the child to read, check (recall), and re-read. And a mental set to learn and to remember is important. Such a set will be present when the child learns in order to achieve goals that appeal to him. We choose for learning only those things that are most likely to meet the future needs of the child. But we make sure that these same learnings satisfy present needs for new experiences, recognition,

and self-esteem. We plan out-of-school assignments so that they are interesting projects to be completed rather than an hour's reading to accomplish.

We know that the primary cause of forgetting is interference and that maximum interference occurs when learning experiences are similar to one another. But when materials are well learned they are less similar to other materials than they are when poorly learned. If we use a wide variety of sensory experiences the learnings will be less similar and thus interfere less with each other. And if we consider carefully the child's ability and govern the quantity of what he learns by his ability to learn, we can encourage each child to learn thoroughly.

For maximum retention the child must see relationships—between old and new learnings and between cause and effect. We build new learnings on old and we teach the child to search for the relationships within situations and the relationships between what he knows and the new situations.

Time invested in review pays great dividends in cutting down on the speed of forgetting. We plan class activities so that review is guaranteed and we show the child how and when to review. But the ultimate test of what is learned in the school is its value to the child in later life. We recognize that not only must we choose wisely those things that he is to learn but that we must teach in a setting that is as life-like as possible.

The purpose of the present chapter has been to examine the learning process. In Chapter 9 we shall look for ways in which we can use this knowledge to build effective classroom learning situations.

Problems and projects

1. Describe in detail how you proceeded during your most recent period of study. What were some of the weaknesses in your procedure? Eliminating time spent on preparations and interruptions, what percentage of each hour's time did you devote to study?
2. Suppose a friend asked you for recommendations on proper study techniques. What specific suggestions would you make?

3. List specific suggestions on how a classroom teacher can control review, recall, and the development of effective learning procedures.

Suggested reading

Gray, J. Stanley, "Problem Solving." Chapter 11 in Charles E. Skinner, (ed.), *Educational Psychology*. New York: Prentice-Hall, Inc., 1951, pp. 374-396. (Particularly worth reading for a discussion of the scientific method as applied to the solution of problems.)

Additional resources

Gates, Arthur I., "Connectionism: Present Concepts and Interpretations," *The Psychology of Learning*, 41st Yearbook of the N.S.S.E., Part II (1942), pp. 141-164. (Interesting discussion of the principles of learning, with some consideration of theoretical points of view.)

McGeoch, John A., and Arthur L. Irion, *The Psychology of Human Learning*. New York: Longmans, Green and Co., 1952. (Chapter 1, "Concepts and Methods," pp. 1-34, describes the laboratory methods for studying learning and discusses some of the problems involved in a scientific study of the learning process.)

Melton, Arthur W., "Learning," in *Encyclopedia of Educational Research*. New York: The Macmillan Company, 1950, pp. 668-690. (A review of numerous studies—includes an extensive bibliography.)

Stolurow, Lawrence M. (ed.), *Readings in Learning*. New York: Prentice-Hall, Inc., 1953. Chapter 7, "Retention and Forgetting," pp. 346-407. (Reprint and discussion of five articles on learning and forgetting.)

Thorndike, Robert L., "How Children Learn the Principles and Techniques of Problem-solving," *Learning and Instruction*, 49th Yearbook of the N.S.S.E., Part I (1950), pp. 192-216. (Discusses the nature of problem situations and effective methods for solving problems.)

Learning in the classroom

Having gained a factual knowledge of how and why learning takes place, we must search for specific classroom situations and teaching methods that will enable us to make maximum use of our knowledge. In our professional training we must learn both how to build effective learning situations and how to guarantee maximum retention and application of the learnings that are achieved.

In Chapters 6, 7, and 8, we discussed the development of learning ability, the motives that energize learning, and the basic principles of learning. For purposes of study, it is convenient for us to isolate these aspects of the learning process. But we must remember that knowledge about the learning process is not an end in itself. Our real goal is to learn how to *apply* our knowledge so that children will learn in the most effective way possible.

The old saying that teachers are born and not made no longer holds true. As a modern, well-trained teacher, you must first have learned what and how to teach each child. You must know the material that you are to teach, the nature of the child, and the best methods of instruction. True, much of what makes you able to learn to teach and to enjoy teaching has come from your original nature and from the environmental forces that you encountered before you entered the teacher-training program. But without training, regardless of your interests, ability, and personality, you could not possibly perform at the level expected of the professional teacher in today's schools.

Since most prospective teachers lack experience in dealing with

children, let us see how we can apply our knowledge of educational psychology to the actual business of classroom teaching. Let us attempt to identify some of the problems of directing classroom learning and see what application we can find for our knowledge of the learning process.

1. We know that in an hour's time a child may learn much or he may learn little. What makes a learning situation effective?

2. We know that the learnings that take place in the classroom are not ends in themselves. How can we guide learning toward educationally worth-while goals?

3. We know that it is the child rather than the teacher who must do the learning. How can we so guide the learning situation that the child maintains an active attack on his learning problems?

4. We know that children in the same school grade differ widely in ability. How can we make adjustments for differences in learning ability?

5. We know that in spite of our best efforts, we cannot make every minute's work so fascinating for every child that learning will proceed automatically toward educational goals. How can we gain and preserve the leadership that we must have if we are to offer the necessary guidance of the classroom learnings?

6. We know that to learn the child must solve problems. How can we help him to develop work habits and problem-solving skills that will result in economy, persistence, and effectiveness in solving problems of increasing complexity?

7. We know that forgetting is ever an enemy of what has been learned. How can we provide for maximum retention?

8. We know that we must use minute-to-minute and day-to-day learning situations for the mastery of a large body of essential materials and skills. Can we find a general teaching procedure that will make maximum use of what is known concerning how children learn most effectively?

9. We know that not only must classroom learning be remembered but it must be made applicable to the problems that the child will meet in life. What criteria can we use for selecting the classroom learnings?

Let's take these professional problems one at a time and seek satisfactory solutions.

Creating an effective learning situation

WHAT IS an effective learning situation? The answer to our first question is relatively simple. But to answer the eight other questions that we have listed, we must first identify the conditions of effective learning.

An effective learning situation is one in which the child strongly desires solutions for problems that block him from satisfying one or more of his motives. His need for security, self-esteem, the esteem of others, and new experiences are always present in the classroom. If he can see opportunities to satisfy these needs, if he must learn in order to do so, and if the learning is within his ability, the chances are great that he will learn effectively. But if the problem situation presents a threat to the child's security, or a loss in his self-esteem or esteem in the eyes of others, or if it fails to offer him new experiences, it will not lead to effective learning, no matter how many times the child is forced to read a certain passage, to repeat a certain answer, or to copy a certain set of exercises.

Thus in the effective learning situation *the child is actively striving to solve problems*. As teachers, we must achieve this condition and more. We must guide his activity toward educationally sound goals. How can we accomplish this?

Directing learning toward educational goals

FROM the standpoint of providing a felt need to learn, the most important characteristic of the classroom is that it is a social situation. There is a social interaction between the child and his teacher and between the child and his peers—he strongly desires the esteem of both. The classroom provides also a vast opportunity

for new and interesting experiences. And, working with friends and a well-adjusted teacher on mutually interesting problems, the child should find security there. In addition, the classroom can satisfy certain of the child's habit motives. There is ample motivational force available for energizing the learnings of the classroom. How can we direct this force? How can the classroom experiences be made rewarding to each child?

We know that for effective learning, the child must be trying to reach goals that are important to him. It is not enough that we see that the learnings he attains will be important to him in the future. They must be important now. How can we make goals that will be important, important now?

The ability to write an effective business letter, the ability to talk convincingly to fellow adults, the ability to keep personal accounts accurately will be tremendously important to the child when he becomes an adult. But they will not be important to the child unless progress toward them results in recognition, self-esteem, new experiences, and security now.

The child can become extremely active in digging information from reference books, in writing a poem or a theme, in working an experiment in chemistry, or in preparing a talk. And he thus learns a great deal that will be useful to him as an adult. But he will be extremely active only if these activities satisfy present needs. He may need the reference material, for example, to defend a position that he has taken. He may need the poem or theme because it will give him the approval of peers, parent, or teacher. The experiment in chemistry may be a fascinating new experience. And he may have to give the talk in front of his fellow students. A boy raises a pig and keeps careful records of its costs not because of his future need for this knowledge but because of present rewards; a girl bakes a cake and makes an attractive dress not because she will some day be a homemaker but because she wants to wear the dress or receive praise for her skill in making it.

This, then, is the secret of directing effective learning toward educational goals. You are always aware of the long-range objectives toward which you guide the child—but you offer the child

immediately attainable ones. Although you evaluate effective learning in terms of educational goals, you recognize that the child strives toward personal goals. And each child in your classroom will attack problems that temporarily block his attainment of personal needs.

An effective learning situation is not enough. You must guide the child's activity toward goals that are educationally worth while and you must help the child to *maintain* an active attack on the problems that stand between him and his goals.

Maintaining an active attack on problems

Why must you know how to guide the child to an *active* attack on his problems? Will he not strive actively to solve problems if his goals are important and attainable? Actually, the maintenance of the child's attack on problems is one of your most important professional tasks. You may know that the goals are extremely worth while but the child himself must be led to see how they can satisfy his needs. You may know that the goals that are being set are attainable, but without guidance the child may not see that they are. And without your guidance the child's attack may be side-tracked. Each child will require redirection from time to time if he is to persist in solving his problems.

Let's see how we can help the child to maintain an active attack on his problems without guiding and restricting his efforts to such an extent that his learning becomes ineffective.

To say that learning is an *active* process does not mean that you as the teacher should busy yourself in pouring out information every minute of the day. In fact, the more *active* you are in solving problems before they are felt by the child and in illustrating ideas before the child has had a chance to search for applications, the more *passive* the child is likely to be.

The amount of mental activity in which a pupil engages seems to be closely related to how often the teacher is content to remain silent. Teacher glibness, or words for words' sake, almost certainly

interferes with the learning process. Even the most able student needs time to ingest ideas and information. The illustrations and applications that occur to the child as a result of his own thinking are far more valuable than the flood of information emanating from an over-fluent instructor.

You know from your own experience that one student may get a great deal from listening to the lectures of an able teacher, whereas another may get little or nothing. The reason is that the first student is stimulated to think by what he hears. He goes beyond what is said, recalls examples, forms hypotheses, and sees relationships. But the second, fearful of missing a single fact, tries to remember every word. For the first one, every sentence creates a problem; the other merely tries to hang on from one sentence to the next—the only problem he meets is that of trying to remember everything he hears. The immature student is incapable of creating his own problems as he listens to the teacher's discussion. You must take the time and the trouble to suggest problems to him that will challenge his interest.

But how do you take the group of children that sit in your class (or run noisily about the room) on the opening day of the semester and lead them to identify attractive goals? How do you transfer the general activity into the activity that is essential to effective learning? How do you use the child's own needs to maintain an active attack on classroom problems?

For one thing, you will utilize the child's desire for your esteem. You will want to learn the names of the students in the classroom as soon as possible. You will want to find out about their abilities. Take time for a friendly word with each child and show an interest in him. Students are eager to serve and feel more like members of the team when they are asked to contribute their energies and talents. Encouraging each child to share in classroom responsibilities builds rapport and cooperation. Your interest and trust may help transform a potential problem child into a stable, confident citizen.

And you use the child's own needs to hold his attention to the task at hand. Every child wants to win the esteem of his peers.

This force, properly channeled, can be of great value to you in creating an effective learning situation.

If most of the students find a task rewarding, and if they are anxious to carry it through to completion, group pressure alone is usually enough to hold down disrupting forces. Many leaders have succeeded by not pushing to the front and not attacking a problem until the interested group was aware of the problem's existence. Instead, they wait until the problem becomes so troublesome that the group actively demands a solution. By seeming to ignore the problem until others demanded that it be solved, and only then leading the group to the attack, they have been able to establish strong and effective leadership.

One of the important motives of the child is the desire for new and interesting experiences. Children resent boredom and do not learn well when they are bored. Although we find it difficult to make each day an exciting new adventure to each child, there are numerous ways in which we can prevent classroom learning from becoming monotonous. A change of pace or a change of activity helps prevent boredom. Particularly among younger children we must vary the mood and the activity frequently. We can use different problems during the same work period or we can try different approaches to the same problem. For example, one part of the period may be given over to individual work, another part to a discussion by the class as a whole, and another part to work in small informal committees. The use of a wide variety of materials—motion pictures, recordings, maps, and models—insures an effective change of pace. Your own appearance and actions can be an element in preventing boredom and promoting active learning—try to speak in an interesting rather than a monotonous voice, wear clothing with some color, inject humor into the learning situations.

As you work with children you will find that you can suggest methods for attacking specific problems rather than giving them the solutions. You become sensitive to signs of inattention or of departure from the problem at hand. You give individual help where it is needed, but you do not stop an active attack even though you feel certain that is not the most direct approach to

a solution. You will find that some children require much more guidance than others. You will discover that for some children the larger problems must be broken into smaller problems.

Providing for differences in ability

WE KNOW that some children lack the ability to progress at the rate we expect of children of their age. But unless they can maintain their self-respect and feel pleased with their progress, they will not learn as rapidly as they can and they will seek satisfactions for their needs in other activities. How can you adjust the learning problems so that each child finds success in the classroom?

First, you must be sure that each child is allowed to complete one task before he begins another. This is particularly important to the child of lower ability, since unless he can complete a task he gains a feeling of failure rather than success from having attempted it. His ability does not allow him to keep several tasks in mind at the same time. You must be sure that each task you lead him to attempt is in keeping with his potentialities for successful completion. The learning that a child acquires from carrying out successfully a relatively small, but carefully chosen, portion of the course work is far more permanent than the learning achieved by muddling through the entire work of the course in a vague and haphazard fashion.

Children sometimes complete the work of a grade so unsatisfactorily that they are required to repeat it. Almost without exception, at the end of his second time around the repeater has achieved little more mastery than he achieved the first time. If he does show any improvement, the chances are that it is the result of his year's growth in mental maturity rather than of any benefits derived from the previous inadequate exposure to the materials. How can this problem be met in the classroom? Is there any way of adjusting the content of the course to the student who is simply incapable of mastering the entire program that has been prescribed?

Ideally, the teacher should be able to plan the class work so that

some children can master the most necessary skills and the most important knowledge while more able children go on to more advanced activities in keeping with their abilities. At present, however, the organization of our schools makes such adjustments difficult. But it is a worthy objective. An intelligent adjustment of course content results in far greater permanence of learning than does our present procedure of exposing all members of the class to the same amount of material. It is impossible, of course, for the teacher to do this job by himself. He needs sincere help from curriculum-makers and textbook writers.

However, there are ways in which the skillful teacher can adjust for individual differences in ability and at the same time keep the class together within the broad limits of the course. For example, as soon as you have become acquainted with the ability of each member of the class (through personal conferences, test data, and a study of the child's past record), you can adjust your assignments to fit the child's needs. In a social studies class, you might suggest that one sixth-grade child investigate the types of animals found in Brazil by reading about them in a supplementary fourth-grade text, and suggest to another that he study the differences in government between Brazil and the United States by using supplementary references of eighth- or ninth-grade difficulty. When you use differential assignments of this sort, you will get the best results by encouraging each child to volunteer for the projects that are of special interest to him. Be careful to call upon each child to present his own findings and be sure that each child is rewarded in examinations *for achieving at the level of which he is capable*. By rewarding each child and by holding him responsible for his learning, you encourage him to form desirable work habits. But if you hold him responsible for concepts and materials that are beyond his ability to master, you will force him into confusion and discouragement.

The differential assignment gives the pupil of low ability a chance to make a real contribution to the class attack on a general problem. In your planning, do not be content simply to provide

reading materials that are written at different levels of difficulty but that contain the same information. That is not enough. Instead, encourage the class as a whole to attack the same large problem and encourage each member of the class to contribute different facts and ideas to its solution.

Our knowledge of individual differences in ability makes one fact clear: Good teaching does not decrease individual differences, either in background of knowledge, mental growth, or special skills. In any one year of instruction, the bright child, if he is really challenged, may grow as much as one and a half to two years in mental ability, reading ability, and general educational achievement. The dull child, even with maximum opportunity and the best of teaching, can scarcely be expected to grow even one year for each year of instruction. Your job as a teacher, then, is not to try to improve on the child's mental equipment, but rather to help him make the best possible use of what he has.

There are numerous ways for seeing that each child finds success in learning to the best of his ability. For example, the child must be successful on the examinations that he takes. One way for making this possible is to examine only on core skills and facts and to use other methods of appraisal and reward for the special contributions of the more able child.

You must use care in pitching your level of instruction so that all children will have an opportunity to learn. Materials presented to the entire class must be understandable by even the most retarded child. You must not allow yourself to be so carried away by the gleaming faces and understanding nods of the bright children that you leave the average or dull child completely confused. Yet if you direct all instruction at the retarded child you fail to offer the bright child the stimulation that he needs.

What is the solution? Obviously you must devote a large portion of instructional time to helping each child identify the problems that he can solve and to furnishing him with the guidance he needs. And the oral instructions or information that you direct to a group of children must be understandable by every child in the group.

Material that you present orally as well as material that you assign in books must be chosen with due regard for the ability of the child to understand.

Attaining leadership in the classroom

AS A CLASSROOM TEACHER, you must furnish leadership. The kind of leadership that you furnish will be a most important determinant of the effectiveness of the learning situation. You could decide to be autocratic—you could seek to decide the minute-by-minute activity of each pupil. You could tell your pupils how you want everything done and, if you had the strength and persistence, you might thus achieve what is sometimes called a well-disciplined classroom. But you would not have an effective learning situation. You would drive your pupils to conform to your wishes by threat of failure and fear of punishment. Your pupils would be working to escape goads rather than working toward goals. For effective learning, the child's attention must be focused on goals that *he* needs to attain.

There is a second possible type of leadership. You could decide to allow your pupils to take all responsibility, to make all decisions, to set all standards of behavior, to determine what, when, and how to study. Your rôle could be no more important than that of any individual pupil—in fact, you could strive to be one of the pupils. This type of leadership is known as *laissez faire*, or “let-alone.” If you were to behave in this way, you might have activity in your classroom but it would not lead to active learning, except occasionally and by chance. You would not be offering the guidance that is expected of the professional teacher.

Fortunately, there is a third type of leadership—democratic leadership—which has come to be accepted as the only type of leadership that the professional teacher may offer. It maintains an active attack on educationally worth-while problems. You help the child to find appealing goals and to identify the problems that he must solve to attain them. Your leadership involves an element

of salesmanship. You know that the child has certain needs. You offer him opportunities for satisfying these needs through learning in the classroom. Your skill in doing this will determine how actively the child will attack his problem and how effectively he will learn.

The leadership that you furnish should not stifle the development of pupil leadership or block pupil responsibility. But, particularly during the opening weeks of work with a group, you must be present promptly at the time class is to begin and you must be ready to assume leadership. If you fail in this responsibility, you will find that other leadership will emerge before you realize it, and the class may be led in undesirable directions. The easiest way to make your leadership acceptable to the pupils is to have a plan for beginning work and for setting the stage for an effective learning situation.

In leading your pupils to attack problems you do not direct the behavior of your class so much as you furnish an example. Your own behavior sets the pattern for student behavior. The fact that you are a mature person to whom the community has delegated authority means that your influence—for good or bad—will be great. You can abuse your authority and abandon your leadership by exhibiting inconsistent or childish behavior. You can strengthen your leadership by behaving with maturity and stability.

In short, you must show by your own attitude that you expect to set the pattern of behavior in the classroom. If you expect the class to start promptly, you yourself must start promptly. Instead of shouting over the din of conflicting voices, you wait for order and quiet before you begin. A quiet voice promotes quietness, but a loud voice is a challenge to the pupils to shout you. By making full use of class time through such techniques as having papers arranged by rows before distributing them and having individuals designated to get materials rather than allowing group congestion, you create an atmosphere in which getting down to business seems the natural way of behaving.

"Discipline" is not an imposed state. Rather, it develops from the desire of the individual child to conform to the behavior of

the group and from his discovery of socially acceptable ways for attaining self-esteem, the esteem of others, new experiences, and security.

If you are successful in setting standards of expected behavior and in creating an effective learning situation for each child, you will automatically have a classroom with excellent "discipline." Instead of an unbroken, frightened silence, you will have a state of activity in which children feel free to attack felt problems. It will be a goal-directed rather than a goal-directed situation.

Ideally, as time goes on you will want to act more as a spectator than as an overt leader. But you can assume that rôle only after every child has met a problem that he is actively attempting to solve. Until this situation has developed, you must maintain direct contact with all the members of the group, or at least with those who are not yet able to identify goals beyond the problems at hand.

Thus you first help the class to get the general group goals identified. Each pupil sees for himself how achieving them will satisfy his needs. You start out from a situation that has familiar elements for every child. Perhaps you are to begin the social studies work with a study of the pioneer—his problems and how he met them. You start with something that is familiar to all members of the class. You may ask the students to consider the area around their own homes. What did it look like in pioneer times—no buildings, no streets or roads, no towns. How would a pioneer obtain food? Clothing? Shelter? During a short discussion it becomes apparent that different students can contribute to different phases of the problem. One may have a grandmother who was a pioneer, another knows of a log cabin still standing, another wants to know how a pioneer obtained soap, wove cloth, or made leather. Another is interested in hunting and wants to know about the firearms of the pioneer. Still another may have an idea that plants furnished medicine, flavoring, and dye. Individual differences, leadership, committees, and individual projects begin to break out from this first group approach.

It will require weeks of effort to build an atmosphere of satisfac-

tion and interest in the work; you can destroy this atmosphere in a few moments by delivering a *reprimand* intended for one or two persons to the whole group. If a few are tardy, noisy, careless, rude, or otherwise not reaching acceptable standards, this must not be made a cause for threatening the esteem, interest, and security of all. The skillful teacher pulls out the best for comment and sets up attractive goals to *lead*, but he seldom feels that it is desirable to *drive*.

Developing effective methods for attacking problems

EVERY TEACHER, no matter what his special interest, is responsible for helping pupils develop efficient study habits and techniques. Children must be taught how to read, for example, not only so that they can gain knowledge from reading but also so that they can integrate their new knowledge with what they already know. They must be encouraged to challenge and to evaluate what they read. Although Chapter 11 contains a detailed discussion of effective reading and study techniques, we are interested here in how the development of these techniques leads to the creation of an effective learning situation.

When a child enters the classroom, we cannot assume that he knows how to study effectively. The study habits that he develops under your influence will be determined by the kind of assignment and examination you give, and by the way in which you guide class discussions. If you *emphasize* detailed, isolated facts, for example, the student will follow your lead and build his study habits around the same emphasis. If you emphasize broad relationships and underlying values, he will adjust his study habits accordingly.

In many courses, it is necessary for students to develop special study habits and skills. If students are to be expected to obtain information from charts and graphs, for example, you will want to be sure that each child knows how to read them with understanding. Or you may want to provide practice in using the library

and special study aids, such as chapter questions, the index, and the glossary.

In a science class, a good procedure is to choose a portion of the new assignment and to ask the students to read a certain paragraph in it. Then you might ask one of the students a question to test his knowledge of the new material, or you might ask him to propose some questions that will test understanding of the paragraph. You may want to proceed well into the assignment, paragraph by paragraph, following the same procedure.

You will certainly want to explain the effectiveness of recall as a study procedure and provide frequent class exercises that require the use of recall in the supervised study of the course materials.

How much material a child reads before he stops to recall will depend upon the difficulty of the material and the number of ideas it contains. In mathematics, the study unit may be only a single sentence, in chemistry a paragraph, and in the social sciences two or three paragraphs. Encourage each child to spend a few minutes in recall at the end of each large study unit and to check on the completeness of his recall before he proceeds.

Since a well-formed habit furnishes its own source of motivation, the formation of good learning habits should be one of your primary aims. Training in the development of these habits should start with the earliest tasks and should continue for as long as the child remains in school. The child who frequently experiences the satisfaction that accompanies the successful completion of his tasks soon comes to value that feeling and is reluctant to leave a task unfinished.

Effective study techniques, then, are teachable, and they are an important part of the equipment of the efficient learner.

Providing for maximum retention

When we studied human learning, one of our major discoveries was that review has a tremendous effect on retention. Forgetting is cut to a minimum when review is correctly scheduled and car-

ried out. Review is particularly powerful in aiding us to remember clearly for a long period of time. But we know that we cannot expect the child to review properly until he understands the value of review and has established efficient habits of reviewing. You will be responsible for using *instructional* procedures that promote and encourage review. There are many ways in which you can do this.

Recalling yesterday's material to set the stage for today's class, summarizing the lesson and the unit, introducing new problems that require the use of previously learned materials and procedures, and the written examination are all *effective review techniques*. Their greatest value, however, is the long-range effect they have on the learner: When the child learns to expect reviews and is rewarded for reviewing, he develops the habit of reviewing.

When you begin your teaching, you may find that you are proceeding far too rapidly to new materials and skills without providing sufficient time for the development, elaboration, illustration, and review of each important concept along the way. Almost all new teachers have that experience. You may be tempted to cover the entire course in a week or two, and to be satisfied that your explanations and instructions are so clear that each child must understand the material. In your eagerness, you may forget that teaching is much more than just dispensing information and answers, and that you cannot transfer understandings directly from your mind to the mind of the child. You cannot *guide* him directly to goals. He himself must meet problems and find applications. The child needs time to accept and to review the information and understandings that it has taken you yourself years to acquire.

You will need to be especially careful to avoid these faults if you were a brilliant student yourself. If you found the curriculum of the elementary and secondary schools easy to master, you may become impatient with students who are less capable than you were. This is a regrettable tendency, because your high intelligence and broad scholastic background should help rather than hinder you in guiding the average and below-average child to solve his learning problems.

The review of yesterday's learnings. To be certain that the children have the material they learned yesterday under control and ready to take its place with what they are to learn today, you will need to devote some time to review at the beginning of each class meeting. Your technique in conducting this review will determine whether or not each child is to participate actively in it. A particularly poor technique, one that you will want to avoid, is to call on a good student to summarize yesterday's work. Certainly this saves time, but it accomplishes even less than if you were to give the summary yourself. As soon as you have announced which child is to recite, the review ceases to be a problem for the other children. Once they discover that only the most capable students are always called on, they simply retire from the review session. As a result, only the students who have already proved their ability actually profit from the reviews.

A far sounder procedure is to direct your questions to the class in general and to allow time enough for each member to formulate his reply. In this way, everyone reviews before anyone recites. You may want to give a weaker student the opportunity to make the first contribution, and then encourage the stronger students to furnish additional points. By *emphasizing and confirming* what each pupil gets right in his contribution, you reward him for his effort. You can usually assume that any errors will be corrected by the pupils who contribute later. This general procedure for conducting review encourages each child to form the habit of reviewing. He learns to recall yesterday's material as he enters the classroom and as he prepares the day's new assignment.

This emphasis on class review does not mean that formal drill in response to questions about facts, dates, and names has again become approved educational practice. Emphasis on review is simply a modern application of the discovery that learnings are soon lost unless we place them in new frameworks, apply them to new problems, recall them, and make them ready to serve as a basis for new learnings.

As you gain experience, you will come to recognize how important it is to devote a large portion of your instructional time to

nailing down, reviewing, and integrating the principles, understandings, and skills that are of crucial importance. Even when you present new materials, you will find review valuable. The old rule of presenting the new in terms of the old has not become outmoded in teaching practice. If facts or principles are worth learning, they are certainly worth reviewing.

The summary as a review. You must be sure, then, that new knowledge is built upon and becomes integrated with what is already known. You will want to emphasize the relationship between new material and present knowledge. To insure that this relationship is meaningful, try to encourage the pupils to supply appropriate applications and illustrations, instead of handing them out yourself. Near the end of the class period, take time to summarize today's learnings. Tomorrow's assignment should come logically from the problems identified in today's summary. The summary and its culmination in the assignment are extremely important parts of effective teaching technique. The summary lesson at the end of each unit provides a further opportunity for reviewing the progress that has been made and for identifying new problems. It gives the children a chance to make a logical transition to the new unit by tying together the material that they have learned and the problems that they are yet to solve.

The examination as a review. The examination itself has an important function in review. The child is motivated to review before the examination, he reviews while he is taking the examination, and he reviews when the examination is later discussed in class. Later on, in Chapter 12, we shall talk more about the use of the examination as a learning device and as a method of appraising the child's progress. Here we are interested in how the examination implements review.

When we know that we must actually demonstrate our grasp of materials, we are motivated to learn them. It might seem that merely knowing that material will be useful at some later time should provide sufficient incentive for learning it. Sometimes that is enough, but not always. The effectiveness of incentives depends

in part on how soon they can be realized. Knowing that we will be rewarded tomorrow for having new material under control is a greater incentive than simply knowing that the material may be useful some time in the future. For this reason, short, frequent examinations have a greater motivational effect than do longer but less frequent examinations.

Some general principles of review. A few new facts and principles, well understood, are of more permanent value than many facts and principles inadequately understood. The amount of new material that a child can learn each day increases as he grows in mental age and as his background of information develops. Thus, in the lower grades children must spend far less time learning new materials and far more time reviewing and integrating what they have already learned than must children in the upper grades.

As a professional teacher, you will realize that working out the correct solution is less important to a child than is the experience that he gains in facing the problem. And so it is with review itself. As each student reviews, his new knowledge is revitalized and integrated with his past learnings. The act of review is much more than simply getting back to the level of learning that had been achieved before forgetting took place. It leads to new understandings and to new relationships. It reveals to the student exciting generalizations that are infinitely more permanent and useful to him than are isolated facts and ideas.

Organizing classwork for effective learning

WE HAVE TRIED to identify the factors that are important in creating an effective learning situation that moves toward educational goals. Let us now examine the important professional problem of directing the minute-to-minute effective learning situations toward broad week-to-week and year-to-year objectives. What approach have teachers found most effective in planning for a day-to-day progress toward the broad course objectives?

Many years ago, Johann Friederich Herbart (1776-1841) listed

One of the results of a carefully planned assignment is that the child voluntarily assumes responsibility for his learning. If his interest is great enough, you will need to do little more than guide him from time to time when his efforts lead him into a particularly difficult phase of the assignment.

How much time should be spent in making the assignment depends on several factors: the type of subject matter, whether you are introducing a new unit or just giving day-to-day direction, and the maturity of the pupils. Few teachers can be accused of spending too much time in making assignments. The tendency is to spend far too little time.

Ideally, the next day's assignment should grow out of the summary of the day's accomplishment. It follows the summary and usually precedes the period of supervised study. Since it does come near the end of the class period, many teachers fall into the habit of treating it casually, forgetting that preparation is the first and most important step in learning. We must be constantly on guard not to become so engrossed in the work at hand that we fail to build a need for the work to be done before the class meets again. At the beginning of a new unit of work, for example, an entire class period can profitably be devoted to making the assignment. With experience, you will learn how much time is needed for making the daily assignments. In any event, making assignments must not be a dictatorial act. The more successful you are in building a need for learning, the more democratic the learning process becomes.

Presentation. There is a wide variety of methods for presenting the materials that the pupils need in overcoming the problems and in reaching the goals identified during the assignment. You will make a detailed study of these methods in other professional courses. Here we can say simply that the specific methods used will depend somewhat on the subject and on the age and abilities of the pupils.

In literature and the social studies, for example, much of the presentation of the material that the child needs for solving his

problems is individualized. The child reads materials that are appropriate to his abilities. In the natural sciences, presentation often takes place in the laboratory. In mathematics, you yourself may present the necessary background material, or you may encourage the pupils to "discover" it by themselves under your guidance. No matter what technique you use, presentation must never degenerate into a mechanical handing out of information. Although you are anxious to guide the child to effective means of solving his problems and reaching his goal, so far as possible the actual exploration should be conducted by the child himself.

The actual solutions that the child discovers as he searches for materials that will solve his problems may be far less important than the skills that he gains in learning how to solve problems. You will find that questions such as "Where can we find out about this?" or "How can we divide this job up so that some of us can do one part of it and some can do another?" are far more effective than are direct suggestions on where the solutions can be found or an apportioning of individual parts of the job by you.

With many types of problems you may want to suggest that the class form committees to take over specific parts of the project. It may be that the materials or ideas for meeting certain types of problems should come from resources outside the classroom. This may be accomplished by letting the children write letters, visit city officials, make trips to libraries or museums, or arrange for field trips for the purpose of collecting information or observing conditions. Whatever method is used (laboratory, class discussion, reading, visual aids, field trips, or committees) the direction and choice often can come from the students, under your guidance. Allowing each child to contribute to the solution of the group's problems can lead automatically to an adjustment for individual differences in ability, background, and interest and to a tremendous energizing of the activity.

Association. This step has been called assimilation by some modern writers and comparison and abstraction by others. To a large extent, it consists of seeing that the mastery of the new

materials grows out of the previous mastery of similar materials and problems. The new learning must take place as a building on and an integrating with the old.

In studying government, the child learns first about his own city or county government, and then proceeds to state and national government. In studying geography, he begins with the rivers, climate, and raw materials of the region with which he is familiar, and then goes on to the features of broader regions with which he is less familiar. He moves from the known to the unknown. He approaches the problems faced by other groups of people or by other nations, either during his own time or at other times, through his knowledge of current problems. History, geography, and sociology must have their roots in the daily lives of the pupils. Facts about the culture of other peoples (the food they eat, the clothing they wear, and the houses they build) take on meaning when they are studied in relation to the problems posed by climate, soil, raw materials, plant and animal life, and transportation routes. Since these factors influence our own living habits, they provide a meaningful approach to the habits of others. By understanding that cultural patterns are the expression of human needs, the child is able to comprehend the behavior of whole groups and nations of people in terms of his own felt needs and problems.

A failure to provide for significant association in the learning experience encourages children to be satisfied with pat verbalisms at the expense of true understanding. Facts are necessary, of course, since they must precede application. But unless the child is able to utilize facts in actual situations, they are of little value to him. If the child's school experience is to be valuable to him in later life, he must develop the ability to apply the facts he learns in school to other situations. By providing for meaningful association at every phase of the learning process, you can guarantee that the facts he learns will take on meaning in ever-widening contexts.

Systematization. This step, which has been called organization by some modern writers and generalization by others, is closely interwoven with presentation and association. Since children are

limited in experience and background knowledge, especially in the early grades, it is your responsibility to suggest to them how the new facts they encounter fit into orderly patterns of knowledge. Fortunately, the tendency to generalize is inherent in all human beings; it is one mark of intelligent behavior. If the infant lacked this tendency, he would never learn to avoid touching all hot stoves after he had touched one. As he matures, he must learn to extend his powers of generalizing to less vivid experiences, to abstract facts and concepts. He must gradually become aware that all knowledge is part of an organized system.

Through learning to generalize his knowledge, the child learns to take the well-learned elements of one situation and recognize that they belong when he encounters them in a new situation. Generalization is a key to the transfer of training from one problem situation to the solution of another.

At an elementary level, the child discovers that methods for determining the square inches in the rectangles that are pictured in his arithmetic book can be applied also to computing the square feet in the playground or the size of a surface that is to be painted. At a higher level, he recognizes that the Golden Rule can be applied as a guide in his relations with others.

Application. In this step, the pupil uses the knowledge that he has gained from a particular study unit in some concrete situation. He uses his organized knowledge of punctuation, for example, in writing themes. But if you want to make sure that he can generalize his new knowledge, you will see that he continues to apply it in all the writing he does after he has learned the specific elements of punctuation. The more often we apply the materials we have learned, the deeper our general understanding of them becomes and the longer we retain them.

Application satisfies the motivation that the pupil experienced during the assignment period. It gives him a feeling of security and self-esteem. The pleasant feeling that accompanies successful application serves to fix the new learning securely in his mind, ready to be used again when it is needed.

Guaranteeing maximum transfer to life's problems

NOW WE COME to our final problem. We know that classroom learning must prepare the child for life's needs. Though technically the curriculum-maker specifies what *should* be learned by the children in your classes, you yourself determine what *is* learned by each child. How can you appraise the relative values of the possible learnings of the classroom? How can you guarantee that what *should* be learned, is learned?

Incidental vs. planned learning. The child learns much in the classroom that has not been listed in our lesson plans or included in our written course of study. He may notice the color of the room, and the presence or even the purpose of items of instructional equipment left in the room by another class. He may learn how to live with his classmates with the least amount of unpleasantness, and he may learn to make allowances for the day-to-day variations in the teacher's mood. However, most of these so-called incidental learnings occur only if some problem arises in his mind about the color of the room, the use of a piece of equipment, or getting along with his classmates or with his teacher. He acquires little that is not needed for the solution of actual problems. For example, you may have lived in your present neighborhood for some time and yet cannot recall the location of the nearest fire alarm box, whether or not there is a telephone pole near a certain corner, or the number of steps on your front porch.

Certainly frequency of an experience does not guarantee that a child will learn. Unless weaknesses in his writing become a problem for him, a child can write a hundred letters or themes and show no improvement. Even if you help him to develop good work habits they soon deteriorate unless his good habits make the work easier or in some other way are rewarding to him. If poor habits meet his needs as well as good ones and if there is no demand that he attain a certain degree of efficiency, poor habits remain. In short, mere presence of opportunity to learn does not guarantee learning.

We recognize, then, that no important fact or principle may be entrusted to incidental learning alone and that all the really important skills, ideals, and attitudes must be taught by every teacher regardless of his subject-matter specialty. But the child can gain much from so-called incidental learnings if you take full advantage of your opportunities. Although certain specific learnings are a part of a social studies class, for example, at the same time you can teach, incidentally, oral and written English, spelling, and effective habits of learning. And in the English class as you teach oral and written expression you can help the child to develop emotionally and socially. But you must be conscious of these incidental goals. You cannot expect the learnings to occur automatically.

For this reason, whether you teach in the elementary or in the secondary school, you must be aware of what each subject that the child studies can contribute to his total curriculum. In addition to knowing the specific goals of your subject you must know the general goals of education and the specific goals that each other teacher strives to reach. The personal and educational development of boys and girls—not the mere teaching of English, sciences, mathematics, art, or music—is your major professional responsibility.

Social utility. You will be responsible for the teaching of a broad area of subject matter and skills. Some of the pupils in your class will have the ability to achieve nearly all the learnings that are set as objectives for your class. But there are others who can achieve but a small portion. We know that a few learnings well mastered are much more valuable than an inadequate exposure to many learnings. What criteria can you use for selecting that portion of the curriculum that is most important to the child? Let's examine the criteria that are used by the curriculum-maker when he builds the total course of study for a grade or subject-matter area.

The most common criterion of the curriculum-builder is that of *social utility*. He seeks to determine whether a certain bit of information, a concept, or a skill has sufficient value that it should be learned by every child, by most children, by only the most able children, or by no child. The curriculum-maker recognizes that

the accumulated knowledge of our society is so vast that each individual masters but a comparatively small portion of it. We must select those items of knowledge *most* necessary to the life of the child in a social world.

Each child must be given the best possible preparation for meeting the problems of later life. He must prepare for a vocation, for citizenship, and for satisfying leisure-time activity.

If you teach in the high school, you should be enthusiastic about what your specialty contributes to the total educational growth of each child. If you are a social-studies teacher you will see that the problems of the world and the necessity for training in good citizenship make preparation in the social studies extremely important. If you teach science, you will have spent many years in getting acquainted with the wonders and values of that field and you will be convinced of the value of your contribution. If you teach English, you will know that excellence in written and oral English has wide practical and cultural value and that far too little time is available for its development. Whatever you teach—physical education and health, art, music, mathematics, and languages, or any other portion of the curriculum—you will see that children need the knowledge and skills that you can offer them. But you must not allow this enthusiasm to prevent you from coordinating your effort with the efforts of those who teach different subjects.

There is little doubt that each child could be a better citizen if he could possess the knowledge that is held by the professor of social science or at least by the college major in that field. There is little doubt that science is important. Its importance has been demonstrated both in the winning of wars and the development of a peacetime world. Ability in oral and written expression and an appreciation of good literature contribute much to the success and happiness of the individual. There is no doubt that without health all other learning avails us but little and that art and music are strong contributors to the peace and happiness of the individual. The only legitimate question that can be raised in any issue of this kind concerns the best use that we can make of our limited time for education and the limited abilities of even the superior students.

Particularly if you teach in the elementary grades where you have control of the child's time for most of the day, you must not allow yourself to concentrate on any one subject-matter field to the neglect of other fields simply because of your own personal interests. Too often a teacher who has a particularly strong interest in natural science, social science, art, languages, or music devotes a large portion of the available time to one of these areas while reading, arithmetic, spelling, writing, and other necessary skills receive too little emphasis. When this happens the child fails to get the preparation for life that he needs. We see examples of this in the secondary school also. Suppose that you are convinced that a knowledge of early American history is extremely important and interesting yet you are assigned to teach a class in local government. And suppose that you disregard the name and purpose of the course and emphasize American history, with the result that the children never gain an adequate knowledge of local government. What happens when, at a later period, a portion of their curriculum is devoted to a study of American history? As you can see, material they already know will be repeated and your students will have missed completely the knowledge of local government that they should have obtained.

Thus, since there is a limited period of time and even the better students can learn but a few new things each day, the decision on what to teach cannot be made on the basis of which elements of knowledge have or may have value. The decision must be made on the basis of which combination has *most* value in meeting the social, economic, and personal needs of the child.

Conclusions

ALTHOUGH the creation of an effective learning situation is a basic professional task of the teacher, your responsibility cannot stop there. Just any learning will not do. Learning must have a purpose. It must be organized toward the child's present and future life needs. Learning problems must be chosen in accordance with each child's abilities and life goals. We must apply our knowledge of

the principles of learning and motivation as we guide the learning of each child in the classroom.

Problems and projects

1. Use your knowledge of the causes of forgetting to justify this statement: "The student of lower ability should be permitted to learn a small portion of the course of study well rather than forced to cover all the work of the course."
2. Why are materials written at different levels of difficulty not the solution to the problem of individual differences?
3. Describe a teacher you have known who was able to build effective learning situations. How did he do it? Would an outsider have been able to make a fair evaluation of the teacher's skill simply by visiting his classroom? Describe a teacher you have known who impressed visitors but who was ineffective with children. Why was he ineffective?

Suggested reading

Garrison, Karl C., "Learning the Fundamental School Subjects," Chapter 14 in Charles E. Skinner (ed.), *Educational Psychology*, 3rd ed. New York: Prentice-Hall, Inc., 1951, pp. 445-483. (A worth-while discussion of learning in the classroom.)

Additional resources

- Douglass, Harl R., and Herbert F. Spitzer, "The Importance of Teaching for Understanding," *The Measurement of Understanding*, 45th Yearbook of the N.S.S.E., Part I (1946), pp. 7-26. (Discusses understanding and how it can be measured.)
- Stiles, Lindley J., Stephen M. Corey, and Walter S. Monroe, "Methods of Teaching," in *Encyclopedia of Educational Research*. New York: The Macmillan Company, 1950, pp. 745-753. (A review of numerous studies of teaching methods—includes an extensive bibliography.)
- Stroud, James B., *Psychology in Education*. New York: Longmans, Green and Co., Inc., 1946. Chapter 13, "Conditions of Learning: Methods and Materials," pp. 442-500. (Discusses conditions for effective learning.)
- Svenson, Esther J., "Applications of Learning Principles to the Improvement of Teaching in the Early Elementary Grades," *Learning*

and Instruction, 49th Yearbook of the N.S.S.E., Part I (1950), pp. 256-279. (How pupils select goals and how learning takes place in a social setting.)

Tyler, Ralph W., "Translating Youth Needs Into Teaching Goals," *Adapting the Secondary-School Program to the Needs of Youth*, 52nd Yearbook of the N.S.S.E., Part I (1953), pp. 215-229. (A discussion of youth needs and how the teacher determines the priority of learnings.)

*Individual differences
in ability to learn*

Even within the same school grade, various children possess vastly different abilities and backgrounds. The teacher must know what constitutes typical mental ability at each grade and age level and must be aware of what variations to expect. This knowledge is a critical element in the teacher's professional equipment. The teacher must know what tasks each child can master. It is more important to fit day-to-day learning experiences to the individual child's level of mental development than it is to see that his desk and chair are appropriate to his physical size.

In Chapter 6, we discussed the nature of intelligence and the factors that influence its development. We found that the primary function of the intelligence test is to measure a child's ability to learn. In Chapter 9, we applied our knowledge of intellectual development, of motivation, and of the principles of learning directly to learning in the classroom. We found that variations in ability to learn are a primary cause of most of our instructional problems, and that if it were not for differences in learning ability, skills, and background knowledge, the task of the teacher would be comparatively easy. We saw why it is important for the teacher to adjust materials and methods to meet the problems created by individual differences.

Simply knowing that wide variations in level of mental development exist at every grade level is not enough. We need specific information about these variations, and specific reference points, in

order to judge what each child can be expected to accomplish. Here are some questions that will guide us in our study of the variations in learning ability:

1. What measurable traits are the best indicators of general learning ability?

2. What variations in these traits do children of the same chronological age show? How much overlap is there in learning ability among different chronological age groups? For example, what proportion of 10-year-old children equal or exceed the average ability of 11- or 12-year-old children?

3. How is age related to variations in learning ability? Is there a greater difference between bright and dull 12-year-old children than between bright and dull six-year-old children? If so, how much difference?

4. Do bright and dull children of the same mental age show differences other than differences in learning ability that require classroom adjustments?

5. What can children with various I.Q.'s be expected to accomplish? What final educational and vocational levels can they achieve?

6. How can we use the results of intelligence tests to predict learning ability? How much faith can we have in various types of intelligence tests?

7. What special abilities and aptitudes should we consider as we work with children? To what extent are special abilities, such as artistic and mechanical ability, independent of general mental development?

8. What general educational plans are used to adjust instructional goals and materials to differences in learning ability? What elements in these plans can we use in the classroom?

In order to answer these questions, we need to assemble specific information from many different sources. For example, even though M.A. is not a perfect indicator of learning ability, nor is I.Q. a perfect indicator of rate of growth in learning ability, still they are the best indicators that we have. And the process of developing and standardizing intelligence tests, especially the two best-known individual intelligence tests, has given us a great deal of information

concerning just what specific I.Q.'s and M.A.'s mean.^{1, 2} In addition, these same data tell us a great deal about the differences in vocabulary, memory span, and other determinants of ability to learn that occur among groups of children of the same chronological age. Still other important data have been assembled by using intelligence tests to study selected groups of children and adults. To supplement our data concerning the level of mental development and achievement that dull, average, and bright children can be expected to reach, we can draw on expert opinion. Our reason for studying these data and opinions is to establish reference points that will help us to understand the children we teach and to establish goals to guide us in selecting materials and methods and in appraising the results of our instruction.

Measurable indicators of learning ability

FOR 50 years or more, makers of intelligence tests have been trying to identify measurable traits that will serve as accurate predictors of learning ability. They have discovered that certain traits are excellent indicators and that others are worthless. They know that size and strength, facial expression and height of the forehead, reaction time and sensory discrimination, and artistic and mechanical talents are useless as indicators of learning ability. But they have found that memory, number sense, actual school achievement, ability to solve problems and to follow directions, ability to handle abstract concepts and to recognize similarities and differences, ability to solve certain types of puzzle and to learn mazes, and general ability to reason are extremely valuable indicators of learning ability. So the modern intelligence test is made up of problems that measure the degree to which an individual possesses these traits.

¹ Lewis M. Terman and Maud A. Merrill, *Measuring Intelligence*. Boston: Houghton Mifflin Company, 1937. This is the guide to the administration of the New Revised Stanford-Binet Tests of Intelligence.

² David Wechsler, *The Measurement of Adult Intelligence*. Baltimore: The Williams and Wilkins Company, 1944. This is the guide to the Wechsler-Bellevue Adult Scale.

Although you may never actually administer an intelligence test yourself, you must know how to interpret the results of such tests, and you will certainly want to know how to read the signs that indicate whether or not a child can learn quickly.

In general, intelligence tests use one or both of two methods of determining learning ability: (1) They make a direct test of a child's memory, reasoning ability, and ability to handle abstractions by presenting him with problems and materials that are new to him. (2) They make indirect estimates of his ability to learn by determining what he has already learned both in and out of school. The direct approach measures the child's memory for a group of numbers, a sentence, or a simple design. The indirect approach uses problems that are designed to find out how much the child has learned from the experiences that are a part of the environment of nearly all children. For example, the child may be asked to tie his shoe laces, to identify common coins, or to draw a picture of a man.

In your own day-to-day appraisal of a child's ability to learn, you will use both approaches too. You will estimate ability by observing how well the child follows directions, how quickly he learns a short poem, and how far he has progressed in reading and other school subjects.

Age variations and age overlap in learning ability

How WIDE are the variations in learning ability within a large group of children of the same chronological age? How much do various chronological age groups overlap in learning ability?

To gain specific information on these questions, let's examine some measurable aspects of ability to learn—memory, for example. The Stanford-Binet Tests of Intelligence test children on their memory for numbers that are pronounced at the rate of about one digit per second. The procedure is as follows:

The examiner says, "I am going to say some numbers and when I am through I want you to say them just the way I do. Listen

carefully, and get them just right."³ The child is given three opportunities to succeed. Three different sets of digits are used, with the same number of digits in each set. The child is given credit for success if he makes one correct response out of the three attempts.

Table 1 shows the percentages of children of various ages who, under these conditions, have a memory span of from two to nine digits.⁴ Since the ability to accomplish the kind of task used to measure intelligence ceases to improve after ages 16 or 18, the achievement of age groups older than 16 is not shown in Table 1.

TABLE 1 *Percentage of persons of various chronological ages able to memorize number series of various lengths**

Number of Digits	Chronological Age															
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Two	38	86	98	99												
Three	15	76	91	98												
Four	1	18	47	77	85	97										
Five			8	25	41	70	81	87	96	96	95	96				
Six					9	19	35	48	67	63	76	80	87	88	92	
Eight										3	9	12	13	19	22	
Nine											2	3	4	4	6	

* Adapted from McNemar, *op. cit.*, pp. 89-98.

According to the table, 2 per cent of four-year-old children fail to memorize a two-digit number, but 8 per cent of them succeed in memorizing a five-digit number. We see that 9 per cent of six-year-old children succeed in a learning task (memorizing a six-digit number) that 8 per cent of 16-year-old children fail.

Obviously, memory for numbers is only one indicator of a child's ability to profit from instruction. Most intelligence tests derive their final estimate from measuring several more or less independent indicators. But the ability to memorize numbers does give us some indication of a child's ability to focus his attention on a problem, and these test findings give us some idea of the range of a child's

³ Terman and Merrill, *op. cit.*, p. 89.

⁴ Quinn McNemar, *The Revision of the Stanford-Binet Scale*. Boston: Houghton Mifflin Company, 1912, pp. 83-98.

ability. Some six-year-olds greatly exceed other six-year-olds. Some four-year-olds exceed some 13-year-olds.

Let's look at some other indicators of learning ability that have been included in the Stanford-Binet Scale. Table 2 lists eight of the problems used. Here again, we see the wide variations in ability among children of the same age and the overlapping of abilities among chronological age groups. For example, 22 per cent of seven-year-olds can draw a simple design from memory but 8 per cent of 14-year-olds fail to do so.⁵

All these tasks are similar to those that the child meets in the classroom. And we can see the vast differences in ability to handle them that exist among children of the same age when they are doing the *best they can*. We must recognize that we cannot drive any one child to perform at a higher level than he is capable of; all we can do is to adjust the level of his activity so that he is able to meet with some success.

TABLE 2 *Percentage of persons of various chronological ages able to accomplish certain tasks on the Revised Stanford-Binet Scale**

Task	Chronological Age															
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Copy a circle	12	62	94	98												
Naming opposites		3	48	78	93	99										
Memory for a 10-word sentence		2	27	64	83	94										
Gives examiner various numbers of blocks			3	43	71	91	96	99								
Sees absurdities in pictures			0	5	39	59	78	85	96	98						
Memory for designs					2	22	31	50	60	72	76	91	92			
Name 28 words in one minute						9	28	49	55	66	70	83	86	88	94	
Interprets proverbs										5	11	22	28	45	51	

* Percentages are taken from McNemar, *op. cit.*, pp. 89 ff.

⁵ If you want to see just how each of the problems in Table 2 is proposed by the examiner, consult the following page numbers in Terman and Merrill, *Measuring Intelligence*: 82, 91, 93, 95, 97, 104, 107, 122. Detailed instructions for scoring responses are given on pp. 191 ff.

*The effect of age
on differences in learning ability*

TABLES 1 and 2 also give us information about how the range of learning ability within a given chronological age group increases with increasing age. For example, in Table 1 we see that only 1 per cent of two-year-old children have a memory span for four digits but that five years later (age seven) 97 per cent can perform this task. But as we get into older age groups (memory span for six digits, for example) we find a much wider spread of abilities—9 per cent of six-year-olds handle a problem that 8 per cent will fail ten years later (age 16). And although only 12 per cent of two-year-old children and 98 per cent of five-year-old children can copy a circle sufficiently well to pass this test, on a more difficult test (memory for designs) we find 22 per cent of seven-year-old children passing a test that can be passed by only 92 per cent of 14-year-olds.

Vocabulary development is an especially accurate indicator of level of mental development. The child's performance on the vocabulary section of the Stanford-Binet Tests of Intelligence (45 words ranging from very easy to very difficult) gives a better indication of the total score that he will make on the test than does any other section of the test.⁶ Thus, if we were to use only one trait to predict learning ability, we would choose vocabulary development. Wechsler, the author of the other best-known individual intelligence test (which uses a list of 42 words), has this to say about the importance of vocabulary as a measure of intelligence.⁷

Contrary to lay opinion, the size of a man's vocabulary is not only an index of his schooling, but also an excellent measure of his general intelligence. Its excellence as a test of intelligence is seemingly derived from the fact that the number of words a man knows is at once a measure of his learning ability, his fund of verbal information and of the general range of his ideas. The one serious stricture that can be made against the Vocabulary Test as

⁶ McNemar, *op. cit.*, p. 139.

⁷ Wechsler, *op. cit.*, 98-99

a measure of a man's intelligence is that the number of words a man acquires must necessarily be influenced by his educational and cultural opportunities. It is seemingly unfair to illiterates and persons with a foreign language handicap.

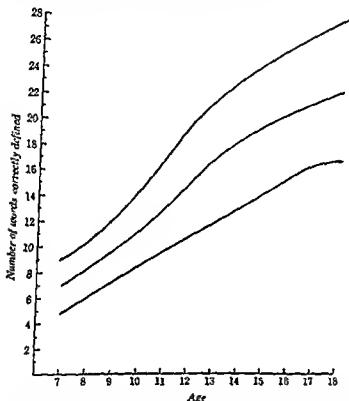


FIG. 1. Growth with age in the vocabulary of bright, average, and dull children. (I.Q.'s of about 115, 100, and 85 respectively.) Adapted from Quinn McNemar, *The Revision of the Stanford-Binet Scale*. Boston: Houghton Mifflin Company, 1942, p. 141.

Figure 1 shows the Stanford-Binet vocabulary test scores of moderately superior, average, and moderately dull children at different ages.* The vocabulary development of moderately superior children (I.Q. 115) is shown by the upper line of the graph. These children are not the brightest you are likely to find in any one

* McNemar, *op. cit.*, p. 141.

class, since more than 15 per cent of all children have I.Q.'s higher than 115. The lowest line of the graph shows the vocabulary development of moderately dull children (I.Q. 85). Here again, more than 15 per cent of all children have I.Q.'s lower than 85.

When we look at the moderately superior child's rate of vocabulary development, we find that by age 14 he has reached the level that the average child does not reach until he is 18, and that by age 11½ the moderately superior child has already surpassed the ultimate (adult) level of growth of the moderately dull child. The increasingly wide variations in learning ability that develop as children become older are shown by the tendency of the three lines on the graph to become wider apart at the upper age levels.

Perhaps a more vivid proof of the wide range of learning ability among groups of older children is provided by the distribution of M.A.'s among large groups of children of the same chronological age. Figure 1, in Chapter 6, showed us that although 50 per cent of the children in any chronological age group have I.Q.'s between 90 and 110, 10 per cent have an I.Q. of 80 or below, and 10 per cent have an I.Q. of 120 or above. Similarly, about 3 per cent are below 70, and 3 per cent are above 130. We know that there is a strong tendency for children to maintain about the same rate of mental growth from year to year and that approximately the same percentage (10) of six- and 12-year-old children have I.Q.'s of 80 or below. But as a group of children of the same age grow older, the dull child falls further and further behind the bright child in ability to learn (M.A.). Thus a knowledge of how intelligence quotients are distributed in the general population helps us to see why there is such a large increase in the individual differences in ability to learn and why there is so much overlap in learning ability between a group of children of chronological age six and a group of chronological age ten, for example.

Since we know that M.A. is our best indicator of ability to learn, let's examine the mental age distributions that we find among five chronological age groups (four-, six-, eight-, ten-, and 12-year-olds). These are shown in Fig. 2.

It is easy to understand why the bright and the dull children (the

upper and lower ends of the five distributions) grow further apart in mental age as they grow older. At age 6, a child of 125 I.Q. has a mental age of 7½; at age 12, he has a mental age of 15. Thus, at age 6 he was but 1½ years above average in mental age, but at age 12

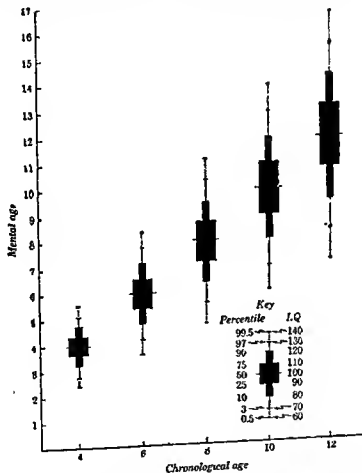


FIG. 2. The range of mental ages among each of five chronological age groups.

he is 3 years above average. The child of 70 I.Q., on the other hand, is 1.8 years below average in mental age at age 6, but 3.6 years below average by the time he is 12 years old. As we can see from Fig. 2, the difference in mental age between any two 4-year-old

children doubles by age 8 and triples by age 12. Although the spread of mental ages within the middle 80 per cent of the group (I.Q. 80 to 120) is only slightly more than $1\frac{1}{2}$ years at age 4, it is over 3 years at age 8 and nearly 5 years by age 12. We can see, then, that although many of the children with the lowest I.Q.'s drop out of school after about the eighth grade, the gross differences in mental age are greater in the high school than in the elementary school.

Actually, when we work with groups of older children, the problem of finding materials and tasks of appropriate difficulty is even greater than these differences in ability to learn suggest. The child who is learning new materials rapidly at 14 was also learning rapidly at age seven, and in the intervening years he has acquired a much greater background of knowledge and experience than the slow-learning child has. Since most school tasks require background as well as ability to learn new material, the classroom needs of these two pupils become disproportionately different as they grow older.

Differences between bright and dull children

ALTHOUGH a 15-year-old child of I.Q. 80 and a 10-year-old child of I.Q. 120 have the same mental age (12), they show many differences other than those caused by their different chronological ages. For one thing, the bright child has found success in school; the dull child has found only failure. Their attitudes toward the whole learning situation will vary accordingly. Moreover, their interests depend on their different degrees of physical development and on the interests of their respective peer groups. Thus, when we are adjusting the educational activities of the school to the individual child's needs, we must consider many factors other than his mental age alone.

Examples of other types of variations that can be expected among children of the same mental age are shown in Table 3. Three

different groups of 25 children each, who were identical on measures of one trait, were compared on measures of other traits.* The children whose scores are reported in column 2 were all of the same mental age (11½). But even on traits that we think of as being closely related to mental age (vocabulary, reasoning ability, and memory) there was a variation within the group of from 2½ to 5 years.

TABLE 3 *Range of variation of seven traits for three groups of twenty-five pupils each when each group was identical in one trait**

Factor	Range in Months for Identical Ability Groups		
	I.Q. 106	M.A. 158 Months	C.A. 129 Months
1. Chronological age	18	34	—
2. Reasoning ability	29	29	58
3. Language ability	29	23	42
4. Non-language ability	35	29	79
5. Vocabulary or verbal ability	58	56	59
6. Memory ability	60	74	59
7. Spatial or visualization ability	79	83	114
Median Range	35	34	59

* Adapted from Ernest W. Tiegs, *op. cit.*, pp. 271-273.

Some reference points for interpreting different I.Q.'s and M.A.'s

PSYCHOLOGISTS and teachers who have had years of experience in working with children of different levels of intelligence have developed useful reference points that give meaning to specific intelligence quotients and mental ages. If, for example, they are told that a 12-year-old child has an I.Q. of 80, 100, or 120, their broad experience makes it possible for them to predict what can be expected of such a child in the classroom. Although nothing can really take the place of experience in working with children, you

* Ernest W. Tiegs, *Tests and Measurements in the Improvement of Learning*. Boston: Houghton Mifflin Company, 1939, pp. 271-273.

can make a start at developing your own reference points by studying reports on the average I.Q.'s of children from different environments and by reviewing the opinions of experienced psychologists on what can be expected of children with different I.Q.'s. Let's examine some of this information.

Although children with I.Q.'s under 70 are commonly referred to as feeble-minded, most of those with an I.Q. of 50 or above (and some with an I.Q. of less than 50) attend the regular public school instead of being sent to special homes for the feeble-minded. Whether or not a child with an I.Q. below 70 is able to care for himself in a community depends more on the demands of his environment than upon the exact level of his intelligence. Thus the degree of feeble-mindedness that necessitates institutional care is determined by social pressures as well as by psychological measures.

However, psychologists rather generally recognize three levels of feeble-mindedness:

1. Idiots (I.Q.'s from 0 to 25) even as adults are unable to guard themselves against common physical dangers. They would soon die if others did not protect and care for them. Even the brightest of this group never advance mentally beyond the level reached by the average two-year-old baby. The highest-level idiots may learn to dress themselves or become able to say a few words but at the lowest level they are unable to sit up and may remain in bed all their lives.

2. Imbeciles (I.Q.'s from 26 to 50) can learn to care for their own physical needs but they require close supervision either in an institution or by their families. They can learn to do simple routine work such as making beds, mopping floors, or digging ditches but cannot develop any clear understanding of money or of their legal or moral responsibilities. The highest-level imbecile may as an adult attain a mental age of about seven.

3. Morons (I.Q.'s 51 to 70) can learn to read and write and as adults can perform many routine jobs satisfactorily. In general, their adult level of mental development will be equal to that of the average child seven to 11 years of age.

One investigator has summarized numerous studies of the intelligence of various groups of children and adults, including the predictions of psychologists on the levels of educational and vocational development that can be attained by persons of different levels of intelligence.¹⁰ His conclusions appear in Table 4.

TABLE 4 *Reference points for establishing the meaning of an I.Q.**

120	Needed to do acceptable work in a first-class college with normal effort.
114	Mean I.Q. of children in Midwest city, from white-collar, skilled-labor families.
107	Mean I.Q. of high-school seniors.
104	Minimum I.Q. for satisfactory (i.e., average) work in high school, in academic curriculum.
93	Median I.Q. of children in eight one-teacher rural schools in Texas.
91	Mean I.Q. of children in Midwest city, from low-income, socially depressed homes.
90	Adult of I.Q. 90 can assemble some parts requiring some judgment, can operate sewing machines where threading and adjusting the machine is required. Child of I.Q. 90 can progress through eight grades with some retardation. With persistence may complete high school with difficulty.
70	Adult of I.Q. 70 can set and sort type, do farm work. Child of I.Q. 70 will be able to attain fifth grade and may do average work there.
60	Adult of I.Q. 60 can repair furniture, paint toys, harvest vegetables.
50	Adult can do rough painting, simple carpentry, domestic work.
50	Child above I.Q. 50 can profit from special classes in regular schools, need not be segregated.
40	Adult can mow lawn, handle freight, simple laundry work.

* Cronbach, *op. cit.*, p. 124.

In Chapters 4 and 6 we found that a relationship exists between the socio-economic level of the family and the intelligence of the child. Table 5 gives us the results of one study of how the intelligence of children is related to the occupation of the father.¹¹ This type of information is helpful to us in two ways. Since the I.Q.'s of parents and their children are closely related, we gain a clue to the level of intelligence required for average success in various occupations. And we can see here the apparent effect of meager or

¹⁰ Lee J. Cronbach, *Essentials of Psychological Testing*. New York: Harper and Brothers, 1949, p. 124.

¹¹ Terman and Merrill, *op. cit.*, p. 48.

TABLE 5 Mean I.Q.'s according to age and father's occupation*

Father's Occupational Classification	Chronological Ages			
	2-5½	6-9	10-14	15-18
I. Professional	116.2	114.9	117.5	116.4
II. Semi-professional and managerial	112.4	107.3	112.2	116.7
III. Clerical, skilled trades and retail business	108.0	104.9	107.4	109.6
IV. Rural owners	99.1	94.6	92.4	94.3
V. Semi-skilled, minor clerical and minor business	101.3	104.6	103.4	106.7
VI. Slightly-skilled	95.1	100.0	100.6	96.2
VII. Day laborers, urban and rural	93.6	96.0	97.2	97.6

* Terman and Merrill, *op. cit.*, p. 48.

of rich home environment on the child's vocabulary, memory, and general ability to learn.

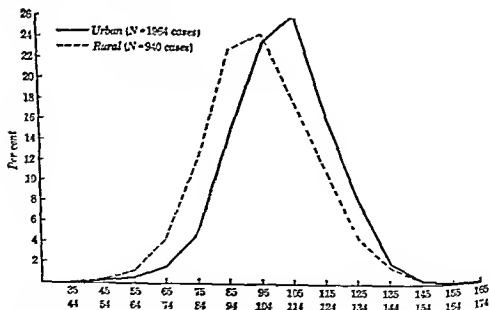


FIG. 3. Distributions of I.Q.'s for rural and urban groups. From Terman and Merrill, *op. cit.*, p. 49.

Differences in intelligence between rural and urban groups of children have also been reported. For example, during the process of standardizing an individual intelligence test, the children tested

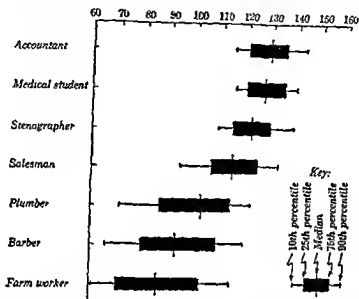


FIG. 4. Army General Classification Test scores for certain occupational groups (enlisted men). From Naomi Stewart, "A.G.C.T. Scores of Army Personnel Grouped by Occupations," *Occupations*, XXVI (1947), pp. 5-41.

were divided into two groups, those living in areas with a population density of more than 1,000 per square mile (urban) and those living in areas with less than 1,000 per square mile (rural). The I.Q. distributions of these two groups are shown in Fig. 3.¹²

Information on the relationship between occupation and intelligence is provided by studies of the scores made by enlisted men taking the Army General Classification Test, a group intelligence test, known as the A.G.C.T. Figure 4 shows seven selected occupations from the more than 200 occupations that have been studied.¹³

¹² Terman and Merrill, *op. cit.*, p. 49.

¹³ Naomi Stewart, "A.G.C.T. Scores of Army Personnel Grouped by Occupations," *Occupations*, XXVI (1947), pp. 5-41.

As you look at this figure, remember that it is based on A.G.C.T. scores, not on I.Q.'s.

Figure 4 is important for two reasons: (1) It makes clear the wide differences that exist between the medians for the seven occupational groups. (2) It also points up the tremendous overlap in abilities between the groups. In the lowest-ranking occupations, there are always some individuals with sufficient ability to be at least equal to the average person in the highest occupational groups. A certain minimum amount of intelligence is necessary for success in the higher-level occupations (note the short range), but no level of intelligence guarantees that an individual will choose a high-level occupation. The data in Fig. 4 are of special importance to us as teachers because they indicate how often our schools fail to guide children with high levels of intelligence to make the best use of their abilities. Many children with high potentialities end up as unskilled or semi-skilled laborers.

TABLE 6 *Distribution of I.Q.'s for all high-school students in St. Louis, Missouri, 1936-7**

I.Q.†	Percentage
140 plus	1
130-139	4
120-129	12
110-119	24
100-109	31
90-99	20
80-89	7
Below 80	1

* Adapted from Johnson, *op. cit.* p. 14.

† The I.Q. was obtained from a group intelligence test—the Henmon-Nelson Tests of Mental Ability.

A look at two final studies of the intelligence of special groups will give us additional points of reference to use in the classroom. One study of the distribution of intelligence among high-school students in St. Louis, Missouri, is reported in Table 6.¹⁴

¹⁴ George R. Johnson, "High School Survey," *Public School Messenger*, XXXV, No. 4 (1937), pp. 1-34.

The other study shows the differences in median I.Q. found in American colleges. All freshmen in 323 colleges took the American Council (group) intelligence test. Table 7 gives the average scores converted into I.Q.'s that are roughly comparable to Binet I.Q.'s.¹⁵

TABLE 7 Median I.Q.'s of freshmen in American colleges*

	Median I.Q. of Freshman Class
Highest-ranking college from a group of 323 colleges	123
Median I.Q. of all freshmen in the 323 colleges	109
Median of four-year colleges	109
Median of junior colleges	105
Median of teachers colleges	105
Lowest-ranking college from a group of 323 colleges	94

* Adapted from Traxler, *op. cit.*, pp. 462-464.

The use of intelligence tests in the school

ALTHOUGH a knowledge of the intelligence quotient and mental age of each child should lead to better teaching, many school administrators refuse to make the results of intelligence tests available to classroom teachers. One reason is that the teacher who has only a general understanding of the I.Q. and does not recognize the limitations of intelligence tests can make serious errors in interpreting test results. For example, he may classify children with low scores as hopeless and fail to provide them with the same stimulation that he would have provided had he not known their I.Q.'s. Or he may classify children with high scores as successful rather than as potentially successful, accept their work without challenge, and fail to hold them to the standard of work that they are capable of.

Another danger is that the teacher may forget that every intelligence test score is merely an *estimate* of the child's intelligence, and that intelligence is only a portion of the child's total abilities.

¹⁵ Arthur Traxler, "What Is a Satisfactory I.Q. for Admission to College?" *School and Society*, LI (1940), pp. 462-464.

If this estimate is secured by a skilled examiner using an individual intelligence test, it will be fairly reliable. It is a much better estimate than can be obtained in an hour, or perhaps even in weeks, by any other means. However, it is still an estimate. As teachers we must never close our minds to other sources of information about the capabilities of the child. Although the individual intelligence test gives an excellent estimate of the general ability of the child, success in certain vocations and even in certain types of school work is not highly related to intelligence test scores.

The administrator sees another important reason why he cannot make test results available until he is sure that the teachers fully understand their implications. Most parents have at least a vague understanding of the meaning of I.Q. They suspect that the intelligence of children is related to the intelligence of the parents. If a child is classed as a moron, the implication is clear to the parent. If a child is classed as brilliant, the parent is likely to take a lively interest in I.Q.'s—particularly in those of his neighbors' children. The inexperienced teacher might erroneously conclude that there is no danger in telling the parent of a brilliant child just how brilliant his child is. But parents have a natural tendency to discuss their children's strong points with other parents; if one parent reports that his child has a high I.Q., other parents begin to wonder where their children stand. They make inquiries, and the administrator begins to encounter problems! Actually, these may be just the sort of problem that the administrator and the teacher should wish to encounter. Ideally, parents and teachers should work as a team in sharing information for the welfare of the child. But parents as well as teachers must thoroughly understand the meaning of intelligence test scores before they can use them to the child's advantage.

And there is another reason why we must be cautious even in the case of the parent whose child has a high I.Q. Both he and the child may begin to take a high I.Q. as an indication that the child has already achieved success. Such an attitude may result in an undue inflation of the ego and a barrier to the development of good work habits.

All these dangers threaten to reduce the potential value of intelligence tests. How are we to avoid them? Obviously, the first step is to acquire a clear understanding of the implications of intelligence test scores and a professional attitude toward the proper use of all information that concerns the child and the school.

The individual intelligence test. The individual test is worth while only if the examiner is well-trained and skillful in encouraging the child to make his best effort. He must know how to interpret the child's responses to a series of carefully determined questions and tasks. He knows how the average child of every age will perform each task and respond to each question, because he is familiar with the responses that hundreds of other children of all levels of ability have made previously.

The tasks and questions included in intelligence tests are designed to sample how the child will react to real-life situations in which he must meet new problems, handle abstractions, use language, and learn new materials. Although the individual intelligence test has been developed only in the past 60 years, it has already become an extremely important educational tool both for predicting the present performance and rate of mental growth of individual children and for studying the environmental factors that are related to mental growth.

In addition to the actual test scores, the examiner learns a great deal about children from his experiences in giving intelligence tests. He develops a rich understanding of the methods of attack and the abilities of the typical child at each age level. If every teacher could become skilled in using the individual test, his understanding of children would be greatly advanced. But the attainment of this skill requires many hours of study and instruction. And even after this basic training has been completed, testing experts say that the examiner must test 50 to 100 children before he can acquire sufficient skill to make his findings reliable. For this reason, training in administering the individual intelligence test is seldom included in the basic program of teacher preparation.

Many teachers, however, seek this training when they work toward advanced degrees.

The group intelligence test. To test each child with the individual test requires the services of a skilled examiner for nearly an hour's time. But the group intelligence test can be used by a careful person after only a short period of training. Of course, we must be more cautious in interpreting the results of the group test, but, if we use it wisely, it can give us valuable information about the children in our classroom.

Ordinarily, the scores made on group tests are in fairly close agreement with the scores made on individual tests. However, the accuracy of the scores depends largely on how carefully the examiner follows the instructions furnished with the test. In addition, he must provide the children with working conditions that are as nearly perfect as possible. The room must be well lighted, there must be ample seating space and a good writing surface, and any needed materials, such as pencils and scratch paper, must be made available. Since time is an important element in most group tests, a stop watch is needed. The examiner must be careful to make clear all the directions and illustrations that are called for, and no more. He should reduce distractions to a minimum; he should not walk around the room, look at papers, or make unnecessary comments. He should read the "Directions to Examiner" beforehand and should follow them carefully. The examination must be scored exactly as specified by the instructions.

Many group tests are accompanied by tables for translating the scores into mental ages and intelligence quotients that have about the same meaning as those obtained from individual tests. However, some group tests make use of percentile norms, with separate norms provided for each age group. If we find that a 12-year-old child makes a score equal to the 75th percentile, we know that only 25 per cent of the 12-year-old group that was used to standardize the test made better scores than that child. In addition, if the group of 12-year-old children that was used to standardize the test was a representative sample of all 12-year-old children, the 75th percentile is equivalent to an I.Q. of about 110, because about

25 per cent of all children at any age level have I.Q.'s above 110.

If the group test is so convenient and economical to use, then, why is the individual test better for diagnosing children with educational problems? To answer this question let's compare the two types of tests.

The individual intelligence test uses both direct and indirect methods for estimating the child's learning ability. The group testing situation, unfortunately, makes it difficult to test directly the child's memory, ability to follow directions, and the like. So the group test must rely on the indirect method and sample what the child has learned from his environment. Fortunately, this ordinarily leads to a reasonably accurate prediction of learning ability. For example, achievement in reading and arithmetic, vocabulary development, and even knowledge of current events are closely related to the ability to learn.

Unfortunately, however, some children, because of emotional problems, absences from school, and other reasons, have not learned as much as they were capable of learning. For this reason, the group test greatly underestimates the ability of individual children with educational problems.

Estimates of mental ability provided by group intelligence tests, then, have all the weaknesses and dangers of estimates provided by individual tests, *plus the weaknesses of underestimating certain children*. Children who have a special disability in reading, for example, tend to make extremely low scores on group tests. The danger lies in the possibility that a teacher will accept the low score as positive proof that the child is dull. This is particularly serious because the bright child with a reading handicap could benefit tremendously from remedial instruction. But once he has become labeled as "dull" he is unlikely to receive such special help.

The alert teacher guards against this danger by examining every possible indication of learning ability. If a child does better work in arithmetic than in reading, if he follows directions and has a good memory, and if he understands information that is presented orally, it is likely that he has a special reading problem rather than low intelligence. Thus, although the group test is useful in identify-

ing children who can profit from an enriched program, it must not lead us into depriving the other children of the maximum opportunity to learn.

Special abilities

WE KNOW that general intelligence is an excellent indicator of the child's ability to learn subject matter, to reason, to understand, and to adjust to social situations. However, there are many other determinants of success in these and other areas of human achievement. We are already familiar with the importance of motivation and physical health, for example. In addition, there are several special abilities that bear little relation to one another or to general intelligence, such as musical, artistic, and mechanical aptitudes.

Individual differences in special abilities arise in part from physiological differences (sense organs, reaction time, coordination, and the like) and in part from differences in opportunity. Each child succeeds in one type of experience and fails in another. If he meets with success in working with tools, in drawing, or in music, and finds it difficult to succeed in his other school courses, he tends to spend more and more time on the activities that provide him with security. Consequently, he develops increased excellence in those activities. Even within areas that are highly related to general intelligence—mathematics, for example—we sometimes find that a child has developed special excellence through extra application even though he has fallen below his general level of intellectual development in other areas.

Providing for individual differences in ability

THERE is probably no school in the country that fails to make some provision for individual differences. Every school and every teacher makes some adjustment in the levels of performance expected of the child with an I.Q. of 70 and the child with an I.Q. of 130. And during the last decade or two, the tendency has been toward

making more and more provision for individual differences in the classroom. With our increasing emphasis on the professional training of both teachers and administrators, and with continuous improvements in instructional materials and laboratory facilities, we can expect this trend to persist.

Certain educational plans for adjusting instruction to the abilities of the individual child are so well known that they have been given special names. It is worth while to examine these plans for ideas that you may want to use in your own teaching, even though you do not teach in a school system that has adopted a special plan.

The *Dalton plan* attempts to make instruction completely individualized and tailored to pupil needs. The classroom becomes a laboratory, with no formal recitations. The plan is best known for its "contracts," in which each student plans a unit of work with his teacher and finishes one contract before he starts another. Individual progress graphs encourage self-improvement rather than competition with other members of the class. Some educators have criticized the Dalton plan's emphasis on the individual contract, since social cooperation is an important product of learning and since social stimulation is an important motivator of learning. Even though social forces cannot be entirely eliminated by any formal plan, it is possible that their impact may be reduced by the use of individual contracts.

The *Winnetka plan* individualizes instruction, but not to the same extent as the Dalton plan does. It starts by identifying those core curricular elements that all children are expected to master. The core is broken into units, and each pupil works on a unit until he has achieved perfect or nearly perfect mastery. The core is so designed that a child of about 95 I.Q. or better should be able to make a year's progress in a year's time. Each child devotes about half his time to the core, and the other half to activities for which no standards are set, such as social studies, fine arts, dramatics, and sports. An attempt is made to place pupils in groups based on social maturity.

A third plan, known as "ability grouping," came into use soon after intelligence tests began to be accepted as educational instru-

ments (1916-1918). At first, groups were formed on the basis of mental maturity. However, numerous problems arose, since a group of children may be homogeneous on any one trait but may vary widely on others. For example, when the children were grouped on the basis of mental age, it was found that they showed wide variations in chronological age, social and emotional maturity, and special abilities.

In more recent applications of ability grouping, only temporary groups are set up. Each group is composed of children whose interests are similar enough for them to cooperate successfully on a given project. Even in a widely heterogeneous group, a skillful teacher can provide individualized assignments and instruction.

Other plans call for the setting up of special classes, particularly in the larger schools, to provide for the needs of one or both of the intellectual extremes. A special class for slow-learning pupils, for example, makes it possible for the teacher to provide them with additional help. But it has another advantage. Where the slow-learning child is in the regular classroom the teacher can give him extra help only at the expense of the average or superior student. Special classes for the most able children have been tried with some success, but they are by no means as common as are special classes for the slow learners.

Perhaps the success of any plan designed to accommodate individual differences depends more on the skill of the teacher and on the cooperation among teachers than it does on the specific details of the plan. Most of the plans contain elements that can be used by the alert teacher even though the plan has not been adopted by the school as a whole.

Conclusions

OUR REASON for examining data and opinions on individual differences in learning ability has been to form concrete reference points that we can use in planning our procedures, selecting our materials, setting our instructional goals, and evaluating our efforts as teachers.

The modern school is a child-centered school whose goal is to help every child achieve maximum growth. Since each child has many present and future needs, including, but going far beyond, cultural knowledge, we must know a great deal about him as an individual if we are to give him maximum help in his preparation for later life. We must know how he resembles and how he differs from other children in his group.

As a teacher you must be a realist. You must work with the child where he is in the process of development. You must work with what the child has in abilities. And working with the child where he is and with what he has, you must help him achieve maximum growth toward carefully selected objectives.

Problems and projects

1. Assume that a parent knows that his child has made a score on a group intelligence test that is equivalent to I.Q. 90. Write a paragraph or two showing how you could help him interpret this information so that it would be most helpful to him and to his child. Do the same for I.Q. 130.

2. List as many reasons as you can why high intelligence does not guarantee the choice of a high-level vocation. Why do we wish to help a child choose a vocation that is not too far below his potentialities?

3. Describe a former schoolmate who appeared to have low learning ability but who found success in his occupation. What special abilities did he have that helped him to be successful? What could or did a teacher do to help him make the best of his ability while he was in school?

Suggested readings

Baker, Harry J., *Introduction to Exceptional Children*. New York: The Macmillan Company, 1953. Chapter 15, "The Slow-Learning," pp. 244-255; Chapter 16, "The Mentally Subnormal and the Feeble-minded," pp. 256-272; Chapter 17, "The Rapid-Learning," pp. 273-281; Chapter 18, "The Mentally Gifted," pp. 282-299. (An excellent supplement to the text's discussion of individual differences.)

Lefever, D. Welty, Archie M. Turrell, and Henry I. Weitzel, *Principles and Techniques of Guidance*. New York: The Ronald Press Company, 1950. Chapter 4, "Guidance and the Curriculum," pp. 57-77. (Discusses the educational problems arising from individual differences in ability and suggests curricular adjustments.)

Additional resources

Five Unifying Factors in American Education, Ninth Yearbook of the Department of Superintendence of the National Educational Association, Washington, D. C., 1931. Chapter VI, "How Elementary and Secondary Schools Are Meeting the Needs of Individual Pupils," pp. 107-146. (Compares the traits of bright and dull children, gives arguments for and against homogeneous grouping, and gives examples of how differentiations may be made in instructional procedure.)

Goodenough, Florence L., *Mentol Testing*. New York: Rinehart and Company, Inc., 1949. Chapter 4, "The Early Tests"; Chapter 5, "Later Developments"; and Chapter 6, "The Present Status," pp. 34-94. (These three chapters give an excellent overview of the history and present status of testing intelligence. They also discuss developments in personality and educational testing.)

Hilgard, Ernest R., *Introduction to Psychology*. New York: Harcourt, Brace and Company, 1953. Chapter 15, "Individual Differences and Their Testing," pp. 340-382. (Excellent discussion of the nature of individual differences and what they mean.)

Jersild, Arthur T., *Child Psychology*, 4th ed. New York: Prentice-Hall, Inc., 1954. Chapters 13 and 14, "The Growth of Understanding," pp. 421-477. (Contains data on the percentages of children at various ages who understand specific concepts or who have specific information. Also discusses the types of understanding typical of various age groups.)

Wechsler, David, *The Measurement of Adult Intelligence*. Baltimore: The Williams and Wilkins Company, 1944. Chapter 1, "The Nature of Intelligence," pp. 3-12. (Definitions of intelligence, with some discussion of theory.)

gether simply because they do not have sufficient reading ability to be able to satisfy their needs within the school situation. The poor reader is always a potential source of trouble in the classroom. Since he cannot satisfy his needs in the typical school situation, he must seek attention and security either by changing the situation or by escaping from it. We cannot expect a child to keep up his interest when his efforts go unrewarded.

Reading, then, is a fundamental concern of the school and of every teacher within the school. Even though the quality of reading instruction in the lower grades of the elementary school is excellent compared with what it was as little as 25 years ago, it remains an important educational problem.

The reading ability of the average ten-year-old child of today is far above that of the average ten-year-old child of a generation ago. The following changes in the teaching of reading in the primary grades are the major reasons for this improvement: making words and phrases, rather than the ABC's, the unit of instruction; emphasizing silent rather than oral reading; selecting materials of a difficulty appropriate to the developmental level of the child rather than forcing all the children to use the same books; choosing materials because they are interesting rather than because they are literary masterpieces; making reading instruction interesting, informal, and rewarding to the child instead of driving him through formalized recitations; and providing materials of progressive difficulty so that even the first-grade child can read many books rather than just one or two.

However, today's curriculum and the society for which it prepares the child demand greater reading ability than was required a generation ago. Unfortunately, during the later grades of the elementary school and throughout the secondary school we do little to encourage the continued development of reading skill and we do an inadequate job of choosing appropriate reading materials.

The problem of adjusting the difficulty of reading materials to the developmental level of the child is particularly difficult at the high-school level. Where 50 years ago few children with I.Q.'s under 100 or 110 attended high school, today many high-school

students have I.Q.'s below 100 and even below 90. The machine age has eliminated the need for boys and girls under 18 or 21 to work full-time. Under the guidance of skilled teachers working toward sound goals, a child or adolescent with an I.Q. of 90, 80, or even 70 can progress further toward good citizenship and a happy and productive life than he could while working as an unskilled laborer or loafing on the streets.

As we discuss reading, we shall keep two distinct problems in mind:

1. Many children do not read (or listen) as well as they should. What can we do to improve their skill?

2. Many children do not have the *ability to learn* to read (or listen) as well as our present curriculum demands. What can we do to adjust our curriculum to their levels of attainment?

What is reading?

WHAT do we mean by reading? There are many possible definitions. We might say that it is the ability to pronounce the words on a printed page; but we know that it is possible to learn to pronounce the printed words of a foreign language and yet have no understanding of their meaning. For this reason, any usable definition of reading must include a stipulation that meaning is attained. We might say that reading consists of obtaining meaning from the printed page, but even this definition leaves much to be desired. Reading must be more than merely obtaining meaning. Reading is a type of thinking. Actually, no meaning exists on the printed page itself. Meaning exists only within the reader. And what is true of reading is also true of listening, since the critical phase of each act is what happens within the reader or listener and not whether the stimulus is a printed or a spoken word. The printed page or the spoken word must *arouse* meaning within the individual who reads or listens, and that meaning must be *integrated* with other related meanings. If integration does not occur, the reader derives little benefit from his activity. Reading must *parallel* and include *reasoning*. The reader must challenge what he reads

on the basis of what he already knows and he must re-examine his present ideas in the light of what he reads.

Certainly the mere skipping of the eye across the printed page is not reading, and the mere understanding of the printed word, without challenge or integration, is at best a low level of reading. For at its highest level then, reading requires both thinking and learning. The reader takes what is on the printed page and uses his store of ideas to accept or reject—and he himself is changed in the process.

Words may suggest thoughts to us, but they cannot transmit ideas or meaning directly from the mind of another to our own mind. For words have different meanings and shades of meaning and these meanings may vary with how the words are arranged in the sentence and what sentences precede and follow. The past experiences and purposes of the writer determine what meaning he intends to transmit; the past experiences and present needs of the reader govern what meaning he receives.

The child has learned to challenge and integrate what he hears and sees and to interpret words in light of the situation long before he learns to read. He discovers that the word "No" has a different meaning when it comes from one person than when it comes from another. An assurance that food is "good" cannot always be accepted without evidence; spanking may be in fun or in anger; and heat may be pleasant or unpleasant.

An excellent measure of the value to us of any material that we read is the extent to which it causes us to think. We learn little by taking the hand of the author and following him passively through a situation. As we know, we learn only as we meet problems and are forced to search for solutions. The learning that we do as we read may add to our stock of ideas or it may strengthen or weaken what we previously have believed.

How we read

ALTHOUGH the simplest element of the printed page is the letter, we read neither by letters nor by combinations of letters. We read

by words and phrases. The total pattern of the word—its length and the picture given by the combination of letters—is the smallest unit of reading. Just as in a painting we see meaning in the completed pattern of the picture rather than in the strokes of the brush, so we are unaware of the individual letters that make up the word.

To have a sympathetic understanding of the difficulties a child meets as he learns to read, we must remember that neither the printed word or letter, nor the spoken word, has any meaning except as a symbol to which we have learned to attribute meaning. The only meaning such symbols can possibly have is the meaning we ascribe to them by mutual agreement. The combination *d-o-g* is no more closely related to the animal of that name than is the combination *x-y-z*, except that we have agreed to use "dog" instead of "xyz" as a symbol for this special animal. With but few exceptions, the words that make up our oral and written language are arbitrary substitutes for objects or situations. Meaning is conveyed from the speaker to the listener or from the writer to the reader only to the degree that both ascribe the same meanings to the symbols used. The first step in the development of reading ability, then, is the development of an adequate vocabulary. Normally, the child first acquires a listening vocabulary and then a reading vocabulary.

The primary purposes of reading are to add to information already possessed, to challenge ideas and concepts presently held, and to obtain vicarious experiences. Thus, the person who has little experience or knowledge of his own will gain little from reading. He must have a background of ideas and experience if he is to profit from reading. The richer his background, the more he will gain from reading. In many cases, the reading that we do and that we expect children to do is so far removed from experience that little is gained from it.

The problem of obtaining meaning from reading is rather cruel in its implications. The child or adult who carries most to the printed page gains most, and the one who carries least gains least. Thus the bright and the dull emerge from the reading of an assignment further apart than they were before.

The goals of reading development

OUR PRIMARY purpose for studying the reading process is to learn how to help the child to read effectively. What are the goals of reading development? Obviously, first we must teach the child to understand what he reads. And second we teach him to integrate what he reads with what he already knows. We recognize speed as a goal of reading development only when we are ready to consider the efficiency with which the child reads. Although the skillful reader can read rapidly, his most important characteristic is his marvelous ability to adjust his pace to the difficulty of the material and to his purpose in reading it. His comprehension remains high for all materials, but his rate fluctuates from as low as 50 or 100 words per minute to as high as 600 to 800 words. He reads slowly when he encounters difficult materials, when he finds it necessary to consider implications, or when he wants to remember a number of facts. By contrast, an unskilled reader with the same level of mental ability plods through both easy and difficult material at about the same rate of speed. His comprehension suffers when he encounters difficult material and, since he maintains the same pace on easy materials, he finds them unchallenging and his attention wanders.

This difference in *flexibility* between good and poor readers is analogous to a farmer plowing a field. Since the tractor has a limited amount of power, as the farmer runs into heavy soil he must make a choice between adjusting the depth of plowing or reducing the speed of his tractor. The unskilled reader pulls his plow to a shallow depth but maintains about the same speed; the skilled reader shifts to a more powerful gear and thus drops to a slower speed.

If he is to read most effectively the many different types of material that he encounters, the child must become a flexible reader. For effectiveness as well as efficiency, different types of materials are read at different rates. The high potential speed of

the skilled reader helps him in two ways: it holds his attention to easy materials and greatly increases the amount he can read per minute. Flexibility is more than a simple adjustment of the over-all reading rate to the difficulty of materials, however. It is a much more subtle process. In almost everything he reads the skilled reader varies his rate from moment to moment. Certain sentences or paragraphs he disposes of rapidly, other portions he reads more slowly. He may even intersperse recitation with reading.

The determinants of reading performance

THERE are five factors that determine how efficiently and how effectively a child reads a given selection:

1. The knowledge and experience that he takes to the printed page.
2. His mental set or intention, including his emotional state.
3. His general reading habits and skills.
4. His general level of mental development (M.A.).
5. The quality of his sensory equipment.

Knowledge and experience. If the child is to broaden his experience through reading, he must have some background with which to begin. What he gains from reading about a topic is determined by the experiences he has already had with the objects, ideas, and concepts discussed. That is one reason why the program in beginning reading starts in the kindergarten and first grade with the development of common experiences and vocabulary. If, for example, children are to begin their work in reading with material based on farm life, you will first want to spend considerable time discussing farms with them and showing them pictures of farms, farm animals, farm chores, and farm recreation. You may be able to complete this preparation with a visit to a farm to make sure that the children have common experiences upon which to build. Such experiences must precede formal instruction in reading, since all the members of a large group of first-grade pupils seldom possess the necessary background to begin reading. For this reason,

pre-primers consist almost entirely of pictures, and many publishers provide additional pictures to supplement those in the books. These pictures serve as conversation pieces to broaden the children's experiences and vocabulary.

There is a close relationship between a child's reading ability and the excellence of his vocabulary. On the average, children from culturally favored homes are better readers than are children from homes lacking in cultural opportunity. Education of the parents, occupation of the parents, exposure to music and art, and the number of books in the home are related to children's reading ability. This relationship is not surprising when we remember that reading is a process of converting symbols into words and ideas. For the symbols to stimulate ideas, the reader must have a background of experience, including a knowledge of the meaning of the words.

At all age levels, both comprehension and speed depend in part on the reader's background. Much that a pupil reads is new and difficult. Lacking the required points of reference or the background concepts, he may find it impossible to see the relationships and implications that the author intends him to see. A fourth-grade textbook in geography may contain hundreds of new concepts, such as Mississippi Valley, atmosphere, Great Lakes, and tides. Even such fairly common phrases as deep harbor, tall buildings, and many people may have little meaning for a child from a small town in a farming region. On the other hand, boys and girls from a large city find it difficult to understand such concepts as diversified farming, erosion, harvest, and irrigation. And neither group of children gains much meaning from a discussion of India's *strange* animals, Africa's *primitive* people or China's *exotic* culture until each can tie these terms to reference points within his own background of experience.

Mental and emotional set. Mental set is an important determinant of both reading rate and comprehension. If a pupil is simply told to read a certain selection, he will read at a much more rapid rate than if he is aware that he will be questioned on the material later on. or if he knows that he is to make some other specific use

of the material. Nearly all readers are able to make some adjustment in their reading rate to suit the purpose of their reading.

Emotional state is also an important determinant of reading (or listening) comprehension. If a child's personal problems usurp his attention, he cannot be expected to concentrate on less immediate goals.

General reading habits and skills. Even persons with equal mental ability show wide differences in the skill with which they adjust to different reading situations. In addition, some persons have well-developed habits of attention; others are easily distracted. Some make full use of charts, glossary, index, maps, and other aids provided by the author; others ignore them.

A study of the eye-movements of 174 university freshmen shows us how important these differences are.¹ Fifty freshmen who were low in general reading ability were compared with other freshmen with average or above-average ability. A special camera recorded the eye-movements of each student while he read materials varying from easy to extremely difficult. The eye-movements of both the good and the poor readers were affected by the difficulty of the materials read. But when the rate of reading and the amount of material read in one fixation were measured, the good readers were found to be much more adaptable than the poor readers. As the material became more difficult, the good readers allotted more time to each fixation unit and reduced their general reading rate more sharply than the poor readers did. These differences in flexibility between good and poor readers have been observed by a number of experimenters.

Other studies have been made of the differences between good and poor readers in eye-voice span during oral reading. Eye-voice span means the distance between the point on the printed page where the eye is focused and the point at which the voice is pronouncing a word. The eye must run ahead of the voice in order to give the reader time to recognize the word that he is to speak next. It has been found that good readers maintain a much greater aver-

¹ I. H. Anderson, "Studies in the Eye-Movements of Good and Poor Readers," *Psychological Monographs*, XLVIII, No. 215 (1937), pp. 1-35.

age distance between the eye and the voice than do poor readers. In addition, they show greater variability in the length of this span. The good reader can allow his eye-lead to drop almost to zero when he encounters difficult words or phrases, and still maintain a smooth flow of speech. But the poor reader, who has little or no eye-lead to reduce, shows the effect of the difficult word in an immediate vocal hesitation.

General level of mental development. Our main reason for studying the determinants of reading performance is to discover which ones can most easily be influenced in the classroom. But we also want to know which factors require adjustments in our assignments of reading materials. Even with the best instruction, some children will continue to be poor readers. We must try to accommodate these individual differences just as we do any other individual difference.

Reading ability and level of mental development are closely related. The correlation between scores made on a reading test and scores made on an intelligence test is almost as high as it is between scores made on two different reading tests taken by the same group of children. Authorities agree that a child can profit little from reading instruction until he has reached a stage of mental development comparable to that of the average child of about six and one-half years of age.

Although few persons learn to read with the maximum efficiency that their level of mental development permits, intelligence remains a major determinant of reading performance.

Differences in sensory equipment. To be able to read, the child must be able to see differences in printed symbols; to develop an adequate vocabulary, he must be able to hear differences in oral symbols. Minor deficiencies in sight or hearing, although a source of inconvenience to the child, should not greatly interfere with his ability to build up a vocabulary or to perceive differences in written symbols. However, many children enter school with such marked deficiencies in sight or hearing that they are almost incapable of benefiting from the experiences that the school offers. A child

with poor sight, for example, may not be able to see the relatively slight differences between words. A child's inability to hear instructions often accounts for his inability to follow them. Each child's sight and hearing should, of course, be checked by a physician when he enters school. But you have a responsibility in the classroom to be alert to any sign of sensory defects.

Individual differences in reading ability

THE OBVIOUS differences between good and poor readers are that good readers possess high speed, good comprehension, and great skill in adjusting to the nature of the material they read. Poor readers are likely to be low in all these traits. The fastest reader in any one class usually can read at least three times as fast as the slowest reader. The reader with the best comprehension may gain as much from one reading as the reader with the poorest comprehension will gain from three or more readings of the same material.

Sixth-grade children have little in common—except that they are all in the sixth grade. Among the children in any school grade, there is a range of educational achievement and mental development of from five to eight years. Thus, in a typical sixth grade we find some children who are able to read no better than the average child in the third grade and other children who are able to read as well as the average child in the ninth or even the twelfth grade. Reading ability, after all, is related to intelligence, and we know that among the six-year-old children who start to school mental ages range from about four (I.Q. 70) to nine (I.Q. 150). Even the middle 50 per cent of six-year-old children have a mental-age range of from less than 5½ to more than 6½ years. We know that these variations in mental age increase as children become older and that educational attainment is highly related to mental age. The most advanced child in any class may be from three to nine years ahead of the least advanced child.

Some of the variations in reading achievement may be due

mainly to causes that can be removed by a remedial program, but the greater number are due to factors outside the control of the school. The child who has more ability is able to make more rapid progress than the child who has less ability.

The variations in reading achievement that we can expect to find in the elementary school are shown in Table 1. We see that the range of individual differences increases from grade to grade. Even in grade two, of 36 pupils we can expect three to have reached only the stage of readiness to learn to read, six to be reading at low first-grade level, and six to have achieved a level of reading ability well above the average for children in grade three. In grade six, we can expect to find three or more who are below fourth-grade ability and the same number who read better than the average child in the eighth grade.

TABLE 1 *Probable distribution of reading abilities in the second, fourth, and sixth grades of an elementary school**

I.Q.	Approximate Number of Pupils in a Class of 36 Who Have This I.Q.	Beginning-of-the-Year Reading Grade Levels		
		Grade 2	Grade 4	Grade 6
120 and up	3	3.4 and up	5.8 and up	8.2 and up
110-119	6	2.7 to 3.3	4.9 to 5.7	7.1 to 8.1
100-109	9	2.0 to 2.6	4.0 to 4.8	6.0 to 7.0
90-99	9	1.4 to 1.9	3.1 to 3.9	4.9 to 5.9
80-89	6	1.0 to 1.3	2.2 to 3.0	3.8 to 4.8
Below 80	3	Readiness	Below 2.2	Below 3.8

* Albert J. Harris, *How To Increase Reading Ability*. New York: Longmans, Green and Co., Inc., 1948, p. 109.

The importance of vocabulary and other background items has been shown by studies of how the ability to comprehend from reading a selection is related to the ability to comprehend from listening to someone else read the same material. With few exceptions, children who comprehend most when they read also gain most when they listen, and those who read poorly gain least

from listening.² In the classroom, then, remember that the poorest readers are also the children who gain least from your oral explanations and discussions.

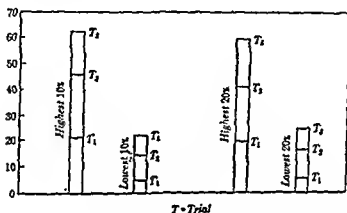


FIG. 1. The effects of practice on individual differences. From Stroud, *op. cit.*, p. 399.

Figure 1 presents in graphic form the differences in listening ability found among members of a group composed of university juniors and seniors.³ A recording of a highly factual article on the location, climate, and history of an Italian city was presented as a lecture. Following the lecture, each student took a 70-item completion test. The recording was presented two more times, and each time it was followed by the same test. On the basis of the results on the first test, two groups were chosen: the 10 per cent making the best score and the 10 per cent making the poorest score. The average test score of the lowest 10 per cent of the listeners after hearing the material three times was little better than the average score of the highest 10 per cent after hearing the material but once. When the scores of the highest one-fifth of the class and the lowest

² Harry Goldstein, "Reading and Listening Comprehension at Various Controlled Rates," *Teachers College Contributions to Education*, No. 821 (1940), p. 54.

³ James B. Stroud, *Psychology in Education*. New York: Longmans, Green and Co., 1946, p. 399.

one-fifth were compared, the differences were nearly as great as between the highest and lowest tenths.

Thus even in a group of university upperclassmen (and few if any university juniors have I.Q.'s below 110), we find that a student in the lowest one-fifth gets little more from three opportunities to listen than a student in the highest one-fifth gets from one opportunity. Other studies have shown the same results with experiments in reading.

Among members of the same school grade, individual differences in ability to achieve are closely related to differences in vocabulary, knowledge, and experience, to differences in habits of reading and listening, and to differences in level of mental development. It is not surprising that the child who goes into a learning situation with the most, gains the most; and that the child who goes in with the least, gains the least. As a result, differences in level of educational development and in capacity for further development become increasingly greater as we progress from grade to grade.

A textbook that all the members of a class can read and understand fails to challenge the better students. However, a textbook that is geared to the average level of the class is far too difficult for the students in the lower one-fifth and is still unchallenging to the upper one-fifth. Whatever procedure we follow in choosing reading materials, we must be sure to provide the children of higher ability with supplementary materials that offer them a chance to enrich their store of facts and ideas.

Providing suitable supplementary materials will be one of your biggest problems as a professional teacher. In any one class, you must provide for a range in reading ability of six years or more, and within this range you must offer a variety of choices to fit the interests and background experiences of each child. There must be something for every child—those in the lower half of the class as well as those in the upper half. To the child, one important reason for reading is to learn something that he can contribute to the class discussion. Social motives are powerful stimulants to learning. The lower the child's ability, then, the greater is your responsibility to help him find some way to make a unique contribution to class

discussion. Even if his contribution is no more than knowing what kind of shoes are worn by the people being studied, the slow-learning child still can achieve a feeling of self-esteem and satisfaction from sharing his knowledge.

Grade-to-grade improvement in reading ability

MANY STUDIES have been made of reading ability from the elementary school through the college years. There appears to be a rapid growth in reading ability during the first four years of school, much less during the next two or three years, and little or no growth thereafter. Most children show little improvement in basic reading skills after the sixth or seventh grade. From this time on, the rate of reading and the general level of comprehension show little improvement. Movements of the eye, including the amount seen during any one fixation, and general maturity of eye-movements, including smoothness and lack of backward movements to re-read, show little change. The child who remains in school, of course, increases in the amount of background information he takes to the printed page and shows continued improvement in his technical vocabulary.

Does this apparent maturation of reading performance in the later years of the elementary grades mean that no further increase in ability is possible? We might think so, if it were not that in special cases, when particular attention was given to the teaching of reading in high schools and colleges, considerable improvement has resulted. The reason for the lack of improvement after the seventh grade is not that the child has exhausted his ability to improve. Rather, it is the failure of the school at the upper grade levels to nurture a need for improvement in reading.

This failure to continue to improve reading skills may be attributed in large part to the departmentalization of the school after the sixth, seventh, or eighth grades. Typically, reading as a subject for individual emphasis is eliminated from the curriculum at the end of the sixth or seventh grade. After this time, it is left to inci-

dental learning, which, as we know, is a good guarantee that it will be ignored entirely. In a departmentalized school, the teachers are likely to be subject-matter specialists interested primarily in science, mathematics, English, or social studies, rather than in stimulating children to learn. High-school teachers too frequently assume that the curriculum above the seventh or eighth grades is a subject-matter curriculum rather than a curriculum that must provide further development in skills.

Another reason for the school's failure to nurture reading improvement is that too frequently the examinations, particularly those prepared by state or other central certifying agencies, are designed to test competence in subject-matter knowledge—often factual attainment only—and do not seek to measure the general development of the child. This emphasis tends to force both teacher and pupil to overvalue facts and to strive only for facts.

Leisure-time vs. work-type reading

LEISURE-TIME reading, which is done primarily for pleasure, and work-type reading, which is done to gain understandings in such subjects as geography, history, and science, differ in many important ways. A recognition of these differences will help you to contribute greatly to the development of general reading skills and perhaps to the development of a taste for good literature. Many teachers of literature use a work-type approach that destroys any incipient interest the child may have in literature as material for leisure-time reading. If in his reading he is forced to concentrate on footnotes, comments, analysis, and minute details of content, he will most certainly fail to gain an appreciation for what good literature can offer. And if he fails to find enjoyment in good literature, he will turn in his leisure time to comics and pulp stories or to non-reading pursuits.

On the other hand, teachers of geography, history, and science, through a somewhat mistaken faith in the value of extensive reading, often employ a leisure-time approach and fail to develop skill

in work-type reading. Leisure-time reading and work-type reading are widely different processes. But we cannot expect the child to make the distinction unaided. The correct methods for each type of reading must be taught.

The child should learn to read literature as nearly any adult reader of good taste reads it. A good story or poem, like a good painting or a good song, can be enjoyed as a whole even by the relatively immature. Considerable maturity, wide experience in reading for enjoyment, and, perhaps, a special interest are necessary for the enjoyment of a detailed analysis of the various parts. Few high-school or even college students are ready for the analytical reading of stories and poems. Reading good stories and poems as wholes and for fun contributes far more to the development of readiness for higher-level appreciations than does reading them with undue emphasis on their component parts.

On the other hand, children must read work-type materials with an intent to master them, and the material chosen must be at a level of difficulty that permits mastery. Some of the material presented in a geography, history, or science class requires a work-type approach, and some of it allows for a leisure-time approach. The child must learn to recognize what approach is needed for different types of material and he must be given supervised practice in each approach. To the child, and even to many adults, reading is reading. He can discover the correct approach to different types of material only if you give him the proper guidance.

Developing skill in work-type reading

EVERY teacher is a teacher of reading, and every teacher must have an opportunity to learn how to teach reading effectively. The high-school teacher needs to learn how reading is taught in the elementary school; the elementary-school teacher needs to know the reading tasks a child will face in high school. And both must recognize that effective reading involves skills that can be taught.

Every teacher, whether he teaches history, geography, or science,

must insure that the pupils develop the appropriate vocabulary and the special skills demanded by his subject. At all grade levels, part of the supervised study time should be devoted to these tasks. Not that subject matter should be shoved out of the curriculum. After all, vocabulary is basic to any specialty, and the study of vocabulary is the study of subject matter. To help the child develop skill in work-type reading, some class time should be spent on exercises in which each student is asked to read a paragraph silently, look up when through, and prepare to answer questions on the material. As we know from the discussion in Chapter 9, the teacher should be careful to select a student to answer the question or to summarize the paragraph *after* each pupil has had time to attempt to formulate his reply. This type of exercise encourages recall and allows the teacher to show the child the specific goals of the type of reading to be done in the course. The teacher, through the type of questions that he asks, can show the child the specific goals of his assignments. Through appropriate questions, the teacher can encourage the child to draw implications or to search for cause-and-effect relationships. The questions attached to study exercises also are important because they will do much to determine whether the child searches for facts and stops, content with his facts, or goes on to see the relation between what he reads and what he already knows.

Probably the larger portion of the teaching of work-type reading skills will occur during the beginning of the year than after the year is well along, but at no time can the teacher assume that his students are skillful in the type of reading required for an understanding of the subject he teaches. In addition to these exercises in the use of recall, the child must be taught to integrate the new material with what he already knows. Older children need to learn how to take notes so that they can preserve materials for future review. The teacher must see that the child understands that a work-type study procedure is much more efficient than is the passive reading of work-type materials. We cannot expect the pupil to make the transfer from the class exercises in how to read to his own unsupervised reading of the same kind of materials unless

we show him that the techniques make his study most economical and effective. Even a first-grade child soon learns to use a *recall* type of approach when taught to look at the whole word on a chart or picture dictionary and then to write it, rather than to copy it letter by letter.

Many skills closely related to reading are sometimes omitted from the school curriculum, even though they are necessary if the child is to become an effective reader. Among them is the ability to locate sources of information and to interpret charts and graphs. Even university graduate students are often weak in these skills.

Children need special practice in learning the parts of a book and their functions. Each pupil should learn to examine the title page, to find out who wrote the book or the article, and to judge whether or not the author is an authority on his subject. The date when the book was written is often important. The table of contents and the index have important functions that many students do not fully appreciate. Children need frequent practice in the use of the dictionary, with emphasis on the history of the language, biographical data, and the pronunciations and meanings of words. They should also become familiar with other common sources of information, such as the encyclopedia, atlas, and almanac. Practice periods in the use of these materials provide excellent opportunities for instruction in the proper care of books. Ideally, instruction in the locating, appraising, organizing, and note-taking skills accompanies the assignments in which they are used, but you cannot assume that the child has already mastered these skills or that they need not be reviewed.

Oral vs. silent reading

THE relatively recent emphasis on silent reading is an extremely important development. In the past, the school devoted a major portion of its reading time to oral reading, and even serious study was sometimes done aloud! Many schools still place far too much emphasis on oral reading.

Even when they are reading silently, most persons make con-

siderable use of their lip and throat muscles in pronouncing individual words ("sub-vocalization"). Their rate of reading is obviously limited by the speed with which they can speak the words. If sub-vocalization can be eliminated, the rate of silent reading, particularly of materials that do not require a great deal of thinking time, can be increased greatly. The current emphasis on silent reading is so general in our schools that in this chapter, when reading is mentioned, it is assumed that we are referring to silent reading.

Oral reading does, however, have three important functions. First, it gives us a chance to check on a child's ability to read silently—his understanding of words, his pronunciation, and his use of punctuation to give meaning to what he reads. Oral reading is frequently used for this purpose in the first two or three grades and for an occasional check thereafter. But even in the earlier grades, we give most of our instructional time to silent reading. When we wish to check comprehension, we ask the pupil to read a sentence or a paragraph silently and then tell what the sentence or paragraph says. Second, oral reading is appropriate to certain kinds of literature. Most poetry, for example, is best appreciated when it is read aloud. Third, oral reading gives the child a chance to share his experience with others. With a book for support, a child may be able to read aloud to a group even though he could not present an extemporaneous report.

Difficulty of reading materials

VARIOUS procedures have been developed for obtaining a mathematical index of the difficulty of reading materials. Sentence length, sentence structure, and the nature of the vocabulary are the determinants most commonly used. Although the specific procedures for obtaining an index of readability are beyond the scope of this book, references to appropriate sources are listed at the end of this chapter.⁴

⁴For an example of the use of such an index, see Edmund W. J. Faison, "Readability of Children's Textbooks," *Journal of Educational Psychology*, XLII (1951), pp. 43-51.

However, what is perhaps the most important determinant of readability cannot be evaluated through use of a formula. Whether or not the reader is familiar with the subject and with its special vocabulary is of primary importance, particularly for the adult. Two readers, equal in general reading skill, may differ widely in the ease with which they can read discussions of chemistry, botany, philosophy, or psychology. And even with nontechnical materials, one reader may find an article on travel, finance, photography, or politics easy to read, and another may find it difficult.

The special reading disability

EVEN THOUGH the teaching of reading found throughout our elementary schools is generally of high quality, many children get out of step with the instruction. They simply have not attained a level of reading skill, and of other skills, in keeping with their stage of mental development.

There are many reasons why a particular child's reading ability may not keep pace with his mental development. Emotional blocks or unsolved problems of one kind or another are perhaps the most frequent basic causes. In general, the child's desire for new experiences, for self-esteem, for esteem in the eyes of others, and for security makes him ready and eager to learn to read. He comes to regard reading as unpleasant and to avoid rather than seek it only if the learning situation in some way threatens these basic motives.

Attempts by the parents to teach reading frequently pose a threat to the child. Parents often fail to build a need for reading and frequently do not use good teaching methods, patience, or tact. The child may be berated for stupidity and forced to attend beyond his normal span. Instruction periods that come after a day of school work are likely to exhaust the child. As a result, both reading and reading materials become charged with unpleasant associations for the child.

Parents sometimes succeed in teaching the child to read before he even enters school. When this happens, the child is out of step with his group when he joins the first grade and is denied the pleas-

ure of discovering reading in a social situation. He finds the school unstimulating and he may develop habits of inattention.

Parents who read a great number of stories to the child may unwittingly contribute to the child's lack of desire to read. His desire for new experiences leads him to books, but he knows that he can win satisfaction more easily when someone else reads to him than if he himself is forced to read. On the other hand, a moderate amount of reading may help the child to develop his vocabulary and may whet his desire for learning to read.

You will remember the threats to emotional adjustment that were discussed in Chapter 3. Any experience that leaves the child emotionally immature is likely to interfere with his educational development. And such an experience can be particularly serious if it occurs during his first year or two in school. A home marked by bickering and strife produces a child so insecure that he can give little thought to less pressing problems. A child who has not achieved a sufficiently high level of mental development to learn to read when we first attempt to teach him can never recapture the interest in school that he loses during this first year of failure. Age mates or even an unsympathetic teacher can so threaten security and self-esteem that the child cannot give full attention to the work of the classroom. Prolonged illness may result in so much lost instruction in important reading skills that further class work results in failure.

The cumulative effect of disabilities

IT MIGHT APPEAR that the intelligent child who finds himself behind his classmates in any academic area would catch up with them just as soon as the emotional or physical block was removed. But he may not be able to. His need to satisfy his motives may have swung his interests into entirely different directions. He may have found that hobbies or other activities *not* closely related to the schoolroom satisfy at least a part of his need for security and new experiences. And once he gets out of step with the day-to-day instruction being

received by the class, he finds it increasingly difficult to understand and use what is being offered; if he does not receive special help, he will drop further and further behind in successive activities that involve the areas he has missed.

A child may develop a special disability in arithmetic, spelling, or writing, as well as in reading. Ordinarily, however, deficiencies in these areas are not so noticeable or so important as are weaknesses in reading, which may prevent success in many other areas of study.

Some approaches to remedial work

FROM the first grade through college, some students need special help in reading. However, the remedial techniques vary with the grade or age at which the deficiency is discovered. In all cases, the first and most important step is to recognize that a certain child can profit from special help in reading. As a classroom teacher, you must accept a major portion of this responsibility.

How can we determine what child will profit from special help and what child already is reading as well as his general level of mental development allows him to read? First, of course, we must find out how well he does read. We use a general survey reading test for this purpose. Then an intelligence test, preferably an individual Binet-type test given by a qualified examiner, is used to determine his level of mental development. By comparing these two levels, we can judge the extent of his special reading disability. The chronological age of the child is not an important factor in determining his need for remedial assistance. A 14-year-old child with a reading age of ten does not have a special reading disability and does not need remedial instruction in reading if his mental age also is ten. On the other hand, a ten-year-old child with a reading age of ten can profit from remedial work if his mental age is 12 or 13.

After you have determined the extent to which a child's reading ability lags behind his mental ability, your next step is to diagnose his specific difficulties. Here we are looking for possible causes as

well as for specific weaknesses in reading ability. A physical examination must be made of his eyesight and hearing. A special type of reading test, called a diagnostic test, is used for locating his strengths and weaknesses in reading. From such a test, you can plan the specific types of instruction that are most needed. For example, the child may be able to recognize an adequate number of common words by sight but lack the knowledge of phonics or of prefixes and suffixes that he needs for recognizing the less common words.

In the remedial reading program, you will help the child to remedy his specific defects and to advance his general level of reading achievement. If the child's difficulty is an inadequate sight vocabulary, you help him to build it up; if he needs phonic skills, you help him to develop them. In some cases, you will need to use first- or second-grade reading methods and materials even though the pupil is a high-school student.

You will find it profitable to study some of the better books on remedial reading. Since specific procedures and suggestions are too detailed to be included here, a list of books and a brief description of each are included at the end of this chapter.

Some schools set up special help rooms where the children may go for part of the day to receive instruction individually or in small groups. The teacher entrusted with a help room should possess great skill in diagnosing as well as in remedying reading difficulties. Only children who have special disabilities, rather than those who are slow in mental development, should be permitted to attend. Attendance in the remedial reading program should be regarded as a real opportunity and not as an implication that the child is stupid.

In other schools, the responsibility for remedial work lies with the teacher; if the school is departmentalized, it must be a cooperative project. In nearly every classroom, you will need to devote some time to individual instruction. You may want to enlist the cooperation of the parent so that the child can come to school early or stay late. In small classes, you may be able to carry on your remedial instruction as part of the regular classroom schedule by devoting short sessions to individual assignments.

When you are attempting to remedy reading deficiencies, you must be particularly careful to find materials that the child can read and enjoy. Remember that you are not interested in whether or not the materials are appropriate to the child's grade and chronological age. You can safely ignore his chronological age, except for the cues it may give you to his interests. Once the child begins to enjoy reading, you can be sure that your remedial program is beginning to show results.

On the high-school and college levels, special instruction is often offered in reading and in general study skills. Groups of about 15 students meet for one to three hours a week throughout a semester. They practice reading different types of assignments, set up and discuss a schedule for their outside study time, discuss and practice effective techniques for review and for preparing for and taking examinations, examine and criticize various methods for taking lecture and study notes, learn how to "skim," and how to get the main point of a paragraph. They may take reading tests of different types and keep a chart showing their improvement in both reading rate and comprehension.

Various mechanical devices to improve reading have received considerable publicity in recent years. They include metronoscopes, films, reading-rate controllers, and tachistoscopes. It has been demonstrated that an intelligent person can greatly improve his reading speed through practice with these devices. Although flexibility rather than speed is the primary goal of the skillful reader, flexibility does require that the reader be able to attain high speed when the occasion warrants. As we know, the child cannot attain high speed so long as he pronounces to himself each word that he reads. And not only is slow reading uneconomical but, on the easier materials, the intelligent individual who must read slowly daydreams, and consequently he may fail to understand what he reads.

So far, we do not know what place, if any, mechanical devices should have in the schoolroom. We do know that the school is not doing an adequate job of helping children attain independence from habits of pronouncing each word during their silent reading. Experi-

mental work is being done with different types of mechanical equipment at different age levels. The advantages and disadvantages of such equipment should soon be well established.²

The function of language in thinking and communicating

LANGUAGE is the instrument with which we think. Mature thinking is impossible without language. We use language to make our plans, to solve our problems, and to recall our experiences. The richer our language, the greater are our opportunities to use it creatively and meaningfully. The language of a civilized people must include a vocabulary for expressing feelings, appreciations, and abstractions, as well as a vocabulary for identifying scientific, legal, and philosophical concepts. Language is basic to our cultural heritage. The modern scientist's understanding of physics could never have been arrived at and could never have been transmitted without a highly specialized vocabulary of materials, forces, time, and distance. As a teacher, you must regard the vocabulary of your special field as an important part of your subject matter.

We spend so much time in our schools trying to devise methods of instruction and to choose materials that will hold the interest of the child of low and average ability that we may fail to provide adequate stimulation for the child of high ability. Why do so few adults make significant contributions to political and social thinking? One reason is that we fail to provide reading problems that challenge adequately the child of higher ability. Few adults are able to recognize political and social problems, or to locate materials that would help them to solve a problem, or to read, appraise, and organize relevant materials. And the few who do manage to recognize the important problems and to locate and organize the

* Walter B. Barbe, "The Effectiveness of Work in Remedial Reading at the College Level," *Journal of Educational Psychology*, XLIII (1952), pp. 229-237. Henry P. Smith and Theodore R. Tate, "Improvements in Reading Rate and Comprehension of Subjects Training with the Tachistoscope," *Journal of Educational Psychology*, XLIV (1953), pp. 176-184.

relevant materials are likely to find that they lack experience in thinking problems through and in arriving at valid conclusions.

If we do an adequate job of developing those highest-level reading skills where critical thinking becomes a part of the reading process, we should find a tendency, on most issues at least, for the best-educated observers to agree on the best solutions. But what we actually find is that on almost all social and political issues nearly equal numbers of honest, intelligent, "educated" men and women are arrayed on both sides.

The communication of ideas. Ideally, the words that you use and the ideas that you express should have the same meaning for you and for the child, the parent, or a fellow teacher. This seldom if ever happens because the meaning of language, whether written or oral, depends upon the background of experiences of both the giver and the receiver and no two persons have exactly the same background of experiences. When we attempt to convey our thoughts to another, certain of our words will have a connotation to the receiver different from what the giver intended. The differences in meaning are of course less when we communicate with someone who has shared many experiences with us, as in the case of children of the same family or a husband and wife. But the differences are particularly great when family, community, and national differences exist. We see an illustration of this problem when members of different national groups gather around a conference table. Their differences in experiences make understanding tremendously difficult even when both groups understand the language used or when an interpreter explains it for them. And we have still other problems as we attempt to communicate with our pupils. In addition to the differences in backgrounds between ourselves and each child, different meanings occur because each of us tends to hear what he wishes to hear. It is easier to confirm the beliefs that we now hold than it is to modify them. The result is that though our listeners nod enthusiastically their actual understanding may be far distant from the idea that we think we are conveying.

Some goals of effective speaking. Despite the difficulty of conveying exactly what we wish to convey, there are certain rules for

the effective use of language that we can profitably follow whether we are speaking to a class or discussing a problem with a parent or a fellow teacher.

The effective speaker tries to know the present knowledge (and opinion) of his listeners. Starting there, he seeks to take them as far as possible in the direction that he thinks they should travel. He starts at a point where his listeners are able to say, "Here is someone who thinks as I think and who values the things that I value." He realizes that the attention of his audience should focus on what he says rather than on how he says it. He knows that such things as an audible pause ("aah"), unusual facial contortions, awkward or unusual postures and movements, and the overemphasis of articles, prepositions, and conjunctions call attention to him and thus lessen his effectiveness as a speaker. He gains emphasis by varying loudness, duration, pitch, and phrasing.

The effective speaker influences the behavior of his audience through offering them satisfactions for their motives. He knows that no one in his audience is interested in helping the speaker (or salesman) achieve what he wants; each listens only for the purpose of satisfying his own personal needs.

Some goals of instruction in handwriting. The two primary goals of classroom instruction in handwriting are readability and speed. Neither should be sacrificed for the lesser goals of beauty, style, and originality. In writing rapid notes intended for the use of the writer alone, lower standards of legibility are acceptable than when the materials are to be read by someone else. Still lower standards are legitimate when the writer is to make immediate use of his own notes.

Occasionally, a parent may ask you what will happen if a child who shows a preference to write with his left hand is encouraged to use his right hand. Many persons have either a slight or a well-established preference for the left hand. Yet our style of writing from left to right makes it necessary for the left-handed person to take an uncomfortable position if he is to avoid dragging his fingers across the written words. So it is more desirable for children

to learn to use the right hand whenever possible. Actually, many have succeeded in overcoming their preference for the left hand and have become proficient right-handed writers.

For a number of years, because of certain facts about the location of the brain area that controls speech and other motor functions, it was believed dangerous to encourage the left-handed child to use his right hand. Studies have been made to determine whether or not such a change was associated with the development of speech defects, such as stuttering. The results of these studies indicate that if the change is made early in the child's life—probably not later than the first grade—and if no undue pressure is exercised by the teacher or the parent, the likelihood that the child will stutter is in no way increased. Stuttering seems to be associated not with changing hands but with emotional stress. If the child has such a pronounced preference for writing with his left hand that he must be frightened or embarrassed into changing, the experience may lead to stuttering. But, since this is a right-handed world in which left-handed writers are at some disadvantage, children who have only a moderate preference for using the left hand will probably profit from learning to use the right. However, the advantages certainly are not great enough to justify placing the child under any emotional strain.

Conclusions

THE TEACHER at each grade level must help each child attain the tools he needs for the current learning activity. You must be able to identify and assist the child of normal, superior, and below-average ability and background. You must be able to recognize and make adjustments for the child with physical handicaps and special emotional problems.

The school's success in contributing to the child's education depends on the teamwork of his teachers and their supervisors. Each teacher must give first consideration to the long-range cooperative goals of the school, such as skill in reading, listening, thinking, and

communicating; sound social and emotional adjustment; good physical health and health habits; high standards of morality and character; and high standards of citizenship.

Never allow your enthusiasm for special subjects or tools to prevent you from helping every child acquire *all* the tools that he will need for success in school and in later life. If you are to be most effective in carrying out the long-range goals of the school as well as in achieving the specific goals of your subject-matter area, you must learn each child's present abilities, skills, and attainments, and, starting from there, encourage him toward maximum growth.

Problems and projects

1. Select five general principles from the chapter that seem most important at the grade level or in the subject that you intend to teach. Why do you think they are important?

2. Try to recall a classmate from elementary or high-school days who seemed to be of average or better ability but who suffered from a reading disability. Suggest what may have caused it.

3. For the grade or subject that you expect to teach, identify some specific adjustments that you can make to accommodate the individual differences in reading ability that you will find.

Suggested reading

Wood, Ernest R., "Subject Disabilities: Special Difficulties in School Learning," Chapter 15 in Charles E. Skinner (ed.), *Educational Psychology*, 3rd ed. New York: Prentice-Hall, Inc., 1951, pp. 484-521. (A general overview of the causes, incidence, and correction of special disabilities, including reading. Cites experiments and case studies.)

Additional resources

Betts, Emmett Albert, *Foundations of Reading Instruction*. New York: American Book Company, 1946. (Designed to help the elementary teacher deal with individual problems in the development of reading. An important reference book for teachers at any level.)

- Bird, Charles, and Dorothy M. Bird, *Learning More by Effective Study*. New York: D. Appleton-Century Company, Inc., 1945. (Suggested reading for the teacher who wishes to learn how to make concrete study suggestions to students.)
- Buswell, G. T., "Non-oral Reading: A Study of Its Use in the Chicago Public Schools," *Supplementary Educational Monograph*, No. 60. Chicago: University of Chicago Press, 1945. (A description of a technique of teaching reading in the elementary grades, with extreme emphasis on silent reading.)
- Flesch, Rudolf, *The Art of Plain Talk*. New York: Harper and Brothers, 1948. (How to speak and write simply and effectively. Suggests methods for appraising the relative difficulty of printed materials.)
- Gates, Arthur I., *The Improvement of Reading*. New York: The Macmillan Company, 1947. (A general resource book for teachers of the elementary grades. A particularly valuable source for a study of diagnostic testing procedures and principles.)
- Harris, Albert J., *How To Increase Reading Ability*. New York: Longmans, Green and Co., Inc., 1948. (A textbook frequently used in beginning courses designed to prepare teachers of remedial reading. Appendix A provides a listing of tests used in reading diagnosis, and Appendix B lists books particularly useful for retarded readers.)
- McCullough, Constance M., Ruth M. Strang, and Arthur E. Traxler, *Problems in the Improvement of Reading*. New York: McGraw-Hill Book Company, Inc., 1946. (Devotes primary attention to the problems of reading at the high-school level. Appendix A lists and discusses collections of materials or workbooks for use in the improvement of reading at the high-school and college level.)
- Stroud, James B., *Psychology in Education*. New York: Longmans, Green and Co., Inc., 1946. Chapter 5, "Reading and Its Conditions," pp. 107-171. (Reports and appraises the research in reading and suggests application to the classroom.)
- Reading in the High School and College*, 47th Yearbook of the N.S.S.E., Part II (1948).
- Reading in the Elementary School*, 48th Yearbook of the N.S.S.E., Part II (1949). (These two yearbooks of the National Society for the Study of Education are important resources for anyone interested in developmental or remedial reading. They contain articles on various aspects of the reading process.)

*Evaluating the results
of instruction*

In o sense, the test-maker determines the curriculum. The objectives and plans contained in o printed course of study ore of little value if we ignore them when we check on the progress of students. Teachers teach and pupils learn those things that in some way satisfy their respective motives. If the teacher measures only how much subject matter the pupils have learned, he saan comes to place value only on subject-matter attainment. If o pupil receives rewards of enhanced security, self-esteem, and respect far his subject-matter knowledge alone, knowledge of subject matter becomes far him the abjective of the course. High-sounding abjectives filed away in our course of study have value only when we appraise the progress that we make toward them.

You are not alone in your need to make a day-to-day appraisal of your progress. All business and professional persons find it necessary to do this. The businessman uses accounting techniques for appraising his progress. Under ordinary circumstances, the physician will not attempt treatment until he knows a great deal about the patient's present health and developmental status. He makes a careful study of blood pressure, blood count, heart, metabolism, muscle tone, lungs, temperature, weight, and specific diseased conditions. He does not work toward broad, general goals of good health for his patient. He considers the patient's health potentialities as indicated by his chronic conditions, age, sex, height, weight,

bodily build, and case history. Similarly, you cannot work effectively toward general goals of worthy citizenship, effective home living, vocational competence, and knowledge of subject matter. You too must establish *specific steps* leading toward these broad educational goals and you must tailor both your goals and your treatment (teaching) to the individual child's present status and potentialities.

The physician uses as his signposts toward the patient's recovery from diseased conditions specific measurable indicators such as blood pressure, temperature, muscle and skin tone, and blood count. He checks these signposts from day to day or week to week and if it seems desirable he modifies his treatment. And you must make day-to-day appraisals of the results of your educational treatment. You too must be ready to modify the treatment as you measure each child's progress and determine his needs and potentialities.

Unfortunately, it is not an easy job to define and break down the broad goals of education into measurable day-to-day objectives based on the individual status and abilities of each child. The social forces of the classroom, the home, and the community make the task extremely complex. And obviously you will not be able to devote all your time to appraising the results of your instruction. The difficulties of the task, however, do not free you from the responsibility.

You will find that certain kinds of progress are easier to evaluate than others. Progress toward the mastery of subject matter, for example, is easier to measure than progress toward the broader goals of education. And the child's command of facts is easier to measure than his understanding of cause-and-effect relationships or his ability to solve problems that require the use of facts. To be meaningful, any measure of a child's progress must be based on his individual abilities and status, although it would certainly simplify matters if we could ignore individual differences. The work habits and study skills that a child develops in the classroom are often more valuable than the actual facts he learns, but they are more difficult to evaluate. Finally, it is easier to evaluate a child's progress toward the instructional goals that are our individual

responsibility than to evaluate his progress toward the goals that are the joint responsibility of the entire teaching team.

In this chapter we shall be interested only in the problems of evaluating the teacher's success in reaching the two groups of instructional goals: those toward which the individual teacher works more or less independently, and those that are the joint responsibility of the teaching team. There is, however, another important group of educational goals toward which progress must be appraised: the so-called developmental goals—emotional adjustment, social adjustment, and the development of character, ideals, and a philosophy of life. In the three chapters that follow, we shall attempt to define this latter group of educational goals and to discover methods for appraising progress toward them.

Actually, the scope of this book does not allow us to examine in detail the specific methods used to appraise progress toward instructional goals. Instead, we must concentrate on the psychological bases of evaluation. We shall talk about specific techniques only when they are essential to an understanding of how the psychological principles of evaluation are applied in the classroom. Your professional study of curriculum, philosophy, measurement, and methods and materials will give you further information on the techniques of appraisal.

Measurement vs. evaluation

THERE are real and important differences between what is called "educational measurement" and the newer and much broader concept of "appraisal" or "evaluation." Measurement is focused on the pupil, and too often it finds him lacking. Evaluation is focused on the environment and what it does to the pupil. Measurement too often is considered an end-product, and the blame for any inadequacies is shifted to the pupil. Evaluation places the responsibility on the teacher and the administrator, and implies that it is their business to make necessary changes in the educational program and to appraise continually the effect of such changes. Evaluation begins with a careful analysis of the goals of education, and studies

the effect of environmental forces on progress toward those goals. Evaluation insists that if the educational situation does not lead to maximum pupil growth, the situation must be modified.

Evaluation is an on-going process focused on the whole child in his environment; measurement focuses on static, isolated points. Evaluation emphasizes interpretation and modification; measurement emphasizes the present educational position. Evaluation is concerned with the total goals and the total environment of the school, the home, and the community. Measurement concentrates on the attainment of subject-matter knowledge. Evaluation uses all the tools and techniques of measurement, but it uses them as means for determining progress rather than as ends in themselves.

Evaluation puts a premium on democratically conducted learning. Where the child himself evaluates his own accomplishment, he learns to welcome suggestions. He learns to value self-improvement and to seek help from his peers as well as from his teachers.

The scope of evaluation

OUR METHODS for evaluating the child's over-all growth both reflect and determine our instructional goals. In addition, they help the child to identify his own goals, not only in subject matter but in personality development and social living as well. An understanding of evaluation and of evaluative procedure helps us to appreciate the professional value of courses in curriculum, methods and materials, philosophy of education, and educational measurement. For to evaluate wisely, we must know both the specific goals of education and the techniques that the professional teacher uses to attain them.

A knowledge of the evaluative process also helps us to see how we can make our best contribution to the accomplishment of the total goals of the school. It helps us to coordinate our efforts with the efforts of others who contribute to educational goals—teachers, administrators, parents, ministers, and community leaders.

To evaluate progress we must become competent in three areas of professional knowledge:

1. The general goals of education and the goals of our subject-matter area or grade.
2. The nature and needs of the child.
3. The techniques for appraising the educational growth of the child.

The goals of education

THE FIRST STEP in appraising the results of instruction is to determine the general educational objectives of the school and the specific objectives of the course we teach. We must not be too modest at this point, and we must deal in specifics rather than in generalities. Our objectives must embrace far more than simply dispensing subject-matter knowledge. We must work toward many objectives, because, whether we realize it or not, what we do in the classroom has a direct bearing on the life success of the boys and girls who pass under our influence.

What you need, then, is a clear understanding of the over-all developmental goals of life. You must see clearly how classroom experiences lead to improved social and emotional adjustment. You will want to break down into immediate goals attainable in the classroom the over-all goals of good citizenship, healthy adult membership in the life of the home, and desirable attitudes toward personal life. Only then can you appraise the individual child's progress as he shares in the social situation of the classroom and playground.

Working with the teaching team. What does all this mean to the individual teacher? For one thing, it means that the teacher of, say, science or social studies must be constantly aware of the specific objectives of other teachers who are working with the same children now, who have worked with them in the past, or who will be working with them in years to come. The specific objectives of every teacher must be coordinated with the general objectives of education. Good oral and written English must be valued and rewarded in the science class and the social studies class as well as in the formal class in English. The teacher who feels that nothing

developing in each child habits of using acceptable English, broadening his reading interests, developing social adequacy and character, and practicing good citizenship.

As in any activity, educational or otherwise, your success in achieving long-range objectives depends on how carefully you detail your short-range, day-by-day objectives. Only by making a specific, complete analysis of your subject-matter program can you choose or construct instruments or determine methods for evaluating progress toward the school's general objectives. Determining objectives is always the first step in evaluating our progress toward them.

Since specific course goals are different for each grade level and for each course, we cannot list them here. You will be spending most of your time in learning how to identify them later on, in your study of the curriculum and goals of the grades or subjects that you prepare to teach. Instead, in this chapter we shall concentrate on the need for determining specific goals and for appraising progress toward them as a psychological foundation for your later courses in education.

Seeing long-range goals. There are certain things, however, that are true of all specific goals, no matter how much they may seem to vary from course to course. For one thing, they are valuable only if they carry the child a step closer to the school's over-all objectives. And to do that, they must be precise and well formulated; they must not be vague or generalized. For example, you and the students in your classroom decide that it would be worth while to study a chart showing the general organization and lines of authority for the three major divisions of our government and their principal subdivisions. What should the purpose of this study be? Probably not for each child to memorize every detailed fact on the chart—although some children may have a valid reason for doing that. The purpose would more likely be one of these: "To provide a broad framework so that each child can see the relationships among the various parts before he studies them in detail." "To show that all the parts are interdependent but that each is responsible for its own activities." "To develop general

skill in reading charts, so that each child will be able to use other charts in books, magazines, and newspapers." "To give practice in reading this specific type of chart." Notice that each objective is worded carefully and precisely; the specific purpose is always clear.

In short, only by making course objectives definite and specific can you do your best job of guiding the learning situation and checking on the results of your instruction. Setting up specific objectives must precede good curriculum planning, effective teaching procedure, and realistic appraisal of results.

The nature and needs of the pupil

THE PROBLEM of individual differences lies at the heart of effective evaluation. It guides us as we choose our teaching methods and materials and as we evaluate the results of our instruction. To provide for individual differences in ability we must identify the specific educational goals that are minimum essentials in each child's preparation for adult life and for later study. These minimum essentials for effective living are the foundation stones of both curriculum and evaluation. We cannot expect every child to realize every one of the school's objectives. Some children can digest only a little from each lesson; others may take all that each lesson has to offer and hunger for still richer experiences. Minimum goals must be based on each child's needs for effective living. The child's progress is far more permanent when he learns a few things well than when he is forced to learn many things superficially.

To insure that each child achieves these minimum goals, we must provide a carefully selected core program that results in a definite progression toward higher and higher levels of skill and knowledge. This core program is so designed that any child who is able to profit from regular school instruction can master it. But we have to go further than that. We must also provide supplementary programs of less critical skills and knowledge for the children who are able to accomplish more. What criterion do we use in choosing materials and activities for the core program and

for the supplementary programs that are built around it? We give priority to what children need the most for effective living. To establish valid priorities, we need a thorough knowledge of the general objectives of education and the specific objectives of each subject-matter area. In the carefully designed program, then, the child of below-average ability masters the core essentials; the average or slightly above-average child masters the core plus other desirable experiences; and, finally, at the program's widest range, the extremely brilliant child enjoys rich opportunities for growth in keeping with his individual abilities.

Ideally, since the curriculum must provide for a continuous grade-to-grade progression, the basic core and supplementary experiences are worked out by committees of teachers. This work requires great skill and much time and effort; it cannot be handled satisfactorily by one teacher or even by one school working alone. However, you will become a better teacher if you see clearly the implications of adjusting instruction and appraisal to the wide range of individual differences that occur in the ordinary class. But do not be dismayed by the size of the problem. Although the ideal solution requires a pooling of many skills and great labor, you can make many adjustments for individual differences on your own. For example, in teaching English you might wish that every pupil in the class could gain an appreciation of Shakespeare, an understanding of infinitives and participles, and competence in debate. To be realistic, however, you may have to decide that the most pressing need is for each child to learn how to write and address a letter so that it can be delivered and read. You can think of many other examples of situations that require priorities ranging from the *most important* educational goals that all children must attain, to eminently desirable but less essential learnings that are within the capabilities of only the more able children.

Evaluation must be flexible. We always consider possible effects on the child's sense of security and self-esteem. An inflexible system of evaluation would reward one pupil with increased security and esteem and threaten another with the loss of security and esteem. In our tests and other appraisal methods, we must offer each pupil

the chance to gain a feeling of personal worth; we must not force him to choose between two labels: "adequate" and "inadequate." How we appraise the child's efforts will have one of two results: Either he will regard school as a desirable, stimulating experience, or he will regard it as an unpleasant situation from which he will escape as soon as he can.

Poor appraisal inevitably results in constant failure for many of the children in the class. A single standard challenges only the mediocre. Our evaluation must offer each child an opportunity to show progress and to achieve success in keeping with his motives and his abilities.

Techniques of measuring educational growth

ALL our attempts to appraise the results of instruction rest on one fundamental principle: Everything exists in some quantity that is capable of being measured. Not that the techniques for determining the quantity are necessarily simple or even in common use. But once we have defined an objective, we can at least estimate any progress that is made toward it. Even such intangibles as social adjustment, emotional adjustment, honesty, good citizenship, and effective study skills exist in some definite amount that is no more impossible to measure than is the attainment of factual knowledge. Of course, they are much more difficult to measure, and techniques for measuring them are not as yet highly refined or accurate. However, the importance of measuring them is so great that we must make every attempt to understand and use existing techniques and to devise techniques of our own to fit the new situations that we encounter.

In today's schools, measuring devices have but one real purpose: To tell us where the pupil was at some point in the past and where he is now. These points are measurable. They give us our only means of appraising the child's progress and the effectiveness of our classroom instruction. This principle seems obvious enough, but it is commonly ignored in evaluations of pupil progress. In most

classes, some students are more advanced on the first day of work than the average students will be at the end of the year. Even though they make no progress at all, they can win a B or even an A. But the other students, even though they achieve all the growth of which they are capable, cannot possibly satisfy either their teacher or their parents. In spite of their progress, they are destined to receive a D or an F as their reward.

All the steps in the process of evaluation go on simultaneously as you teach. You will constantly redefine your objectives and strive to make them more specific. And as you revise your objectives, and incorporate new ones into your professional activities, you will constantly want to evaluate the effectiveness of your progress toward them. In this chapter, we shall discuss some of the specific techniques for appraisal; others fall more logically into Chapter 15 on "The Individual Child." However, your mastery of these techniques will grow more with actual classroom experience than with formal study. Good evaluation is so complex and so important a skill that you will probably continue attempting to perfect it through your whole professional career.

Techniques of appraisal in specific subject-matter areas

You will probably make your most important appraisals of a pupil's progress by observing him as he contributes to the solution of cooperative problems in the classroom, as he requests information, and as he responds to situations. Obviously, evaluation must go far beyond an analysis of his oral and written responses to predetermined questions. However, as a teacher you will be responsible for developing specific subject-matter knowledge. The techniques for appraising and encouraging this development are more formal than the techniques for appraising general progress.

The most frequently used technique for appraising progress in the subject-matter areas is the oral question and oral answer. Properly used, your questions should sample how well each child understands the facts he has learned from study. This may well

be the most effective type of subject-matter evaluation, since it makes full use of the motivational force of the social situation. It has other advantages as well: It can be used frequently, and it gives you a chance to make an immediate confirmation, correction, or elaboration of each answer. It also provides you with an ideal opportunity to recognize individual differences in ability. Improperly used, however, it may present a threat to the child's security, may emphasize isolated facts, and, if only one child is thinking about the problem at any one time, it may be wasteful.

As you use this technique, you will find that the best procedure is to prepare a few good questions before the class recitation. You will want some questions that are less difficult than others, so that the children of low ability will be able to contribute. After you have asked a question, make sure that each child has prepared an answer before you call on anyone to answer aloud. Be especially careful to reward or protect each child as he makes his contribution and to correct any misunderstandings that arise. We shall have more to say about this important technique later in this chapter.

Another important device for appraising subject-matter progress is the written examination on material covered in a unit. There are two general types of written examination, each of which requires a different thought process. In one, we ask the child to recall material that he has learned; in the other, we ask him to recognize it.

To induce recall, we use either the essay or the completion type of examination. If we require only the recognition of material, we use the true-false, multiple-choice, or matching examination, or some variation or combination of these. The recall and the recognition types of examination differ greatly in ease of preparation, ease of scoring, coverage of material, and motivation toward certain kinds of learning. So we shall discuss them as general types before we examine the methods for constructing and appraising specific examinations.

The type of examination a student expects has a direct influence on his motivation in preparing for it. He uses a different procedure in preparing to answer essay questions than he uses in preparing to answer true-false or multiple-choice questions. Actually, two

different mental processes are involved. In the essay examination, he knows that he must not only produce the required material, but also organize it in some sort of logical form. In the recognition type of examination, his task is merely to decide whether material that has been produced by the teacher is correct or incorrect. It is easier to recognize material than it is to recall it. We all know how much easier it is to recognize faces than it is to recall the names that go with them. By requiring the student to produce correct answers, then, the recall examination motivates him to learn the material more thoroughly.

A good essay examination also leads to a high level of appraisal. It demands that the student *apply* material as well as recall it. And the goal of teaching is to prepare children to use their new knowledge in meeting the problems of life. The good objective, or recognition, type of examination also aims to evaluate the pupil's ability to apply information, but it is much more difficult for the test-maker to frame true-false or multiple-choice questions that serve the purpose.

Various studies have been made to determine how the type of examination a pupil anticipates affects the amount and quality of learning he achieves. In one experiment, each of four groups of students was told to expect a certain type of examination. Each group was allowed to study, under supervision, for the same length of time. One group studied with the expectation that it would take a true-false test, another group expected a multiple-choice, another a completion, and the fourth an essay examination. Actually, each group was given all four types of examination, in an effort to determine the relative quality of learning that is achieved when a certain kind of examination is anticipated. The results of this experiment are shown in Table 1.¹

Notice that the students who expected an essay or completion type of examination and who, therefore, studied in order to *recall* material, made better scores than those who expected that they would simply have to *recognize* material in a true-false or multiple-

¹ George Meyer, "The Effect on Recall and Recognition of the Examination Set in Classroom Situations," *Journal of Educational Psychology*, XXVII (1936), pp. 81-99.

choice examination. The students who studied to recall material made higher scores not only on the essay and completion examinations, which they were expecting, but also on the unexpected multiple-choice and true-false examinations. Had the students been

TABLE 1 *Effect of examination set on test performance**

Kind of Test Expected	Scores Earned on Each Test			
	True- False	Multiple- Choice	Completion	Essay
True-False	67.81	63.79	52.57	51.22
Multiple-Choice	86.26	62.82	50.92	42.88
Completion	71.61	67.76	57.40	55.81
Essay	71.23	68.83	60.40	62.34

* Adapted from George Meyer, *op. cit.*, pp. 86-88.

free to decide for themselves how long they wanted to spend in preparation, the results might have shown even greater advantages in studying for a recall type of examination.

This experiment demonstrates that some amount of learning actually does occur while the student is preparing for an examination. Other experiments have shown that pupils learn more from a course in which frequent examinations are given than from a course with few examinations. Knowing that he will have to write an examination motivates the student to learn.

And the learning does not come to an end once the student has finished his preparation. He continues to learn *while he is actually taking the examination*. He sees new relationships and implications and continues to review the material he has already learned. Minute for minute, the well-constructed examination yields more value than almost any other use that can be made of school time. This certainly does not mean that we should use all the school time for examinations, but it does mean that a good examination possesses many educational values in addition to providing an appraisal of the results of instruction. If you are to gain the maximum values from the examination as a learning experience, you will want to follow certain general procedures, regardless of

the type of examination you are using. Here is a summary of these procedures:

1. Use the recall type of examination often, so that students will study for all examinations with the idea in mind that they may be called upon to recall and use material rather than merely to recognize it.

2. Give frequent examinations, so that purposeful study will go on at all times rather than in short spurts just before the end of the year or the end of a large unit of work. The short daily quiz or problem, or at least a weekly check on learning, is of great value.

3. Give each student an opportunity to learn the correct answer soon after he has attempted to answer a question. If his answer is wrong, show him why it was wrong or incomplete, and give him an immediate opportunity to learn the correct response and why it is correct.

4. Construct examinations that encourage the student to apply the factual material he has learned, rather than examinations that merely invite him to make pat, superficial statements about facts that he recognizes. Though factual knowledge is often very useful, we must use our examinations for helping the child apply the facts to situations similar to those in which the facts will later be used.

Specific examinational techniques

REGARDLESS of how well it is constructed, each of the commonly used types of examination has certain characteristic advantages and disadvantages. In addition, each may be used well or poorly, depending on the test-maker's skill and the teacher's ability to use the results for purposes of motivation, appraisal, and enriched learning. Let's look at each of the most commonly used instruments for estimating achievement in subject-matter areas.

The essay examination. The most common criticism of the essay examination is that it is difficult to grade accurately and fairly. In addition, the grading is time-consuming. The glib student may

learn that he can stretch a few general ideas so as to keep any subject decently covered. Poorly handled, the essay examination unduly penalizes the hardworking student who lacks facility in expressing himself. He finds that his hardest efforts cannot overcome his handicap.

It has been shown that different teachers will give widely different grades to the same written examination. One reason seems to be that teachers are variously impressed by the quality of handwriting and neatness, and by variations in ability to write in an interesting and well-organized manner, in ability to punctuate and spell, and in general facility of expression. Another reason is that different teachers assign different values or weights to each question. Then, too, one teacher may believe that even the best paper falls short of perfection and is entitled to a mark of, say 80, whereas another teacher may invariably assign a mark of 100 to the best paper that he scores. Thus, even though two examiners agree that the same papers are the best in the group, they may be using different scales.

This problem of subjectiveness in scoring essay papers has received a great deal of attention from the testing experts—perhaps more than it warrants. Obviously one source of trouble lies in the examiners' failure to agree on the objectives of a given examination. Some examiners feel, rightly or wrongly, that any subject-matter examination should do more than simply test the students' knowledge of the specific facts covered in a unit. They feel that it should also test skill in expression, punctuation, handwriting, spelling, and the like. This position is certainly logical if we believe that each teacher should be responsible for progress toward the general objectives of the school as well as toward the objectives of each specific course.

You will find that your scoring of an essay examination will be more objective if you write out in advance the specific areas to be covered in each question, together with the number of credit points to be given for each item covered. Then you can read through and evaluate all the answers to one question before you proceed to the next. If you want to allow a specific number of additional

points for neatness, quality of thought, spelling, organization, and the like, decide beforehand just what you plan to do. You will probably find that one or two extra points for each feature will serve the purpose. Flexibility of this sort actually enhances the value of the essay examination as an appraisal instrument. It encourages effort toward general school objectives without distorting your appraisal of specific subject-matter growth.

Another objection to the essay examination is based on the so-called "halo effect." The teacher consciously or unconsciously feels that certain students are superior and that others are inferior. This feeling may be the result of the student's physical appearance, his verbal facility, or a knowledge of his past performance. Thus when the teacher reads the examination paper of one pupil, he assumes from the start that the pupil knows the material. When he comes to an inadequate answer, he says to himself, "John means the right thing even though he doesn't say so specifically." But a few minutes later he picks up the paper of another student, who has impressed him less favorably. Now his reaction is quite different: "James doesn't give the exact answer because he doesn't know it." As a result, the teacher may give two equally good papers quite different marks. One way to avoid this error is to have the students write their names on the back of the papers and to avoid looking at the names until all the papers have been appraised.

Since the essay examination necessarily includes fewer questions than the objective examination, it does not provide as large a sampling of the factual knowledge gained in a course. This weakness can be reduced by giving frequent examinations. A small sampling each day or week provides an extensive coverage of the course in a year's time. And though the essay examination takes a long time to score, it requires much less time to construct than does the objective examination.

An extremely important advantage of the essay examination is that it gives you a valuable opportunity to individualize the goals of your instruction. Using the differential assignment and investigating the growth potentialities of each child mean little unless the instrument you use for appraisal allows you to adjust for these

factors. Neither the examination nor your level of expectation can be the same for all children. For example, the child who is expected to learn only the core must have an opportunity to succeed on the examination by proving that he knows the core. The child who studies only about the clothing worn in a certain country cannot be expected to answer detailed questions on the country's economic system. The essay examination provides flexibility in appraisal by giving us an opportunity to interpret responses in relationship to ability and opportunity to learn.

The results of every examination give us two kinds of information that we can use in appraisal. First, they give us gross scores that indicate the achievement of a child or a class in terms of a percentage of the material mastered, or that indicate how well *each child has mastered the material that he personally was expected to master*. Second, they give us information on how effectively we have taught the various elements of the unit just completed. We are vitally interested in determining the specific elements that have been mastered by each pupil and by the class as a whole, and the specific elements that have not been mastered either by individual pupils or by the entire class.

The essay examination is extremely helpful in our attempts to appraise in detail the effectiveness of our teaching. The objective examination, on the other hand, is far less helpful. Unless we make a careful analysis of how many pupils gave a wrong answer to each item of a test, we have little or no information that will help us appraise the effectiveness of our instruction. Even if we do analyze each item, we still have no way of knowing why certain pupils missed it. But as we read the essay examination, we can follow the thinking of each pupil as he approaches each question. By spotting the elements of the course that he has failed to master or that he has misunderstood, we can make plans immediately for the necessary re-teaching.

The essay examination is particularly powerful in allowing us to check on our pupils' progress toward long-range goals of understanding and applying what is learned. Although in any examination we may be tempted to emphasize *who*, *when*, and *where*, in

the essay examination we can easily determine the child's understanding of *why*, and the *cause-and-effect* relationships. And by our questions we can help the child discover relationships that did not occur to him during his study.

The teacher-made objective examination. The objective examination gives us a wide sampling of the pupil's knowledge of core elements in a relatively short period of time. It gives us an objective appraisal uninfluenced by "halo effect," handwriting, organization, and other elements. It makes it possible to test a large number of students in much less time than is needed for the essay examination. If it is well constructed, the objective examination can appraise the pupil's ability to apply facts and principles to fairly concrete situations, although the inexperienced teacher will have considerable difficulty in forming questions to meet this objective.

There are certain principles that experienced teachers use when they draw up, administer, and evaluate objective examinations. If you learn these principles and follow them conscientiously, you will find that your own tests will help you do a better job of evaluation and will be much easier for you to score. Here they are:

1. Give specific and clear directions on how the pupils are to indicate their answers. If the examination includes true-false questions, you might use a statement such as this:

Directions: Read each statement below. If you think that the statement is true or usually true, put a T in the parentheses in front of it; if you think a statement is false or usually false, put an F in the parentheses.

If the examination includes multiple-choice questions, be sure that specific directions precede this section of the examination. Here is a suggested statement:

Directions: Read each of the questions below. Try to think of the correct answer. Then choose the one answer out of the four suggested answers that is most nearly correct. Write in the parentheses the letter that appears before the answer you think is best.

2. Be sure that each student has a copy of the examination. The examination should be typed clearly, without crowding, and should be duplicated on a machine that gives distinct, easily read copy. If facilities are not available for preparing a good copy for each student, it is doubtful whether this type of examination is worth preparing.

3. Provide space along the left margin of the page for the answers to be written in. Or distribute separate sheets for recording the answers. If you use separate sheets, give clear directions on how they are to be used. The separate answer sheets are somewhat easier to score, and they make it possible for the duplicated examination to be re-used, thus saving the paper and time required for duplicating. Be sure to caution the students not to make any marks on the test itself.

4. Make every effort to see that the questions or statements are clear and unambiguous. After you have administered and scored the examination, you can check for ambiguity by arranging the papers in order from low to high score, and then choosing five or six of the highest-ranking papers and the same number of lowest-ranking papers. If you find that certain questions were missed more often by the better students than by the poorer students, the chances are that the superior students misinterpreted those questions. Any question on which both strong and weak students show an equal tendency to make errors is of no help to you in appraising the relative achievement of various students. You may find that certain questions were missed by all the students, or by all those with lowest ability. Such results indicate that you will have to do additional teaching of this material to the class as a whole or to the lower-ranking students.

5. In constructing objective examinations, be sure that you do not suggest the correct answer by the way in which you phrase the question. For example, you may unconsciously phrase a multiple-choice question so that only one or two of the suggested answers could possibly be correct. This is particularly likely to happen when the question is in the form of an incomplete state-

ment. If the verb calls for a certain tense or number in the correct answer, you may inadvertently include only one answer that will make a sensible statement. To avoid this difficulty, read the incomplete statement with each of the suggested answers to guarantee that they fit together smoothly and sensibly.

6. In constructing true-false examinations, be careful not to limit the coverage of the test by lifting statements verbatim from the textbook to form true statements or by lifting statements and changing only a word or two to make false statements. If you are not careful on this point, you will offer a heavy reward for simply remembering factual statements and little or no reward for understanding the framework that gives meaning to the facts. Also, try to guard against using certain typical words when you are phrasing true statements and other words when you are phrasing false statements. It has been found that unless teachers are particularly careful they tend to use such words as *always* and *never* only in false statements and *usually*, *frequently*, and *occasionally* only in true statements. Such cues are an aid to the brighter student and reduce the efficiency of the test as a measure of actual achievement.

7. Consider the use of matching-item tests for the objective testing of certain types of material, such as authors and their works or selections from their works, events and their dates, and the like. Be sure to limit the number of items in each column. You may find that eight items in the left column are enough to be matched with choices from perhaps ten or eleven items in the right column. By placing more items in the right column than in the left you make it more difficult for the student who knows most of the items to guess the final item or two by the process of elimination. Here again, be sure that all the items in the right column can logically be matched with any item appearing in the left column.

The oral examination. The oral examination is valuable both for implementing and evaluating learning. Properly used, it provides a recall experience for each member of the class. It gives you an opportunity to make a quick appraisal of the effectiveness of your instruction and to determine whether or not all the students under-

and that represent a more careful sampling of materials than it is usually possible to achieve in the teacher-made examination.

But these tests have disadvantages too. They are usually devised so that they can be used in all sections of the country and in all kinds of schools. As a progressive teacher, you may find the questions somewhat limited in coverage and inappropriate for appraising the results of a course that is wide in scope and that you have enriched by a wise choice of supplementary readings.

In addition, there is a danger that the norms accompanying the test may be misinterpreted. If you have a group of students who are lower in ability than those from whom the norms were obtained, you may be discouraged by the showing of your pupils when actually they have learned more than average in relation to their ability. On the other hand, if you have a class that is above average in ability, you may be pleased with a showing that, though above the norms based on average students, is actually below what should have been accomplished. Ordinarily, the test-maker tries to base his norms on groups that are average in performance. However, few individual classes are likely to be exactly average. So be careful not to take the norms too seriously when you interpret the effectiveness of your instruction, since the only valid way to interpret performance is in relation to pupil ability.

If you are aware of these weaknesses in the standardized test, you may find it a very useful instrument of appraisal. It provides you with an objective, ready-made test that is well constructed, and it saves you many hours of time that you would otherwise spend in constructing your own tests. Some teachers find a file of standardized tests of great value in suggesting items for teacher-made examinations and in helping them to develop their own skill in devising items.

Familiarizing students with standardized achievement tests has one great advantage apart from their immediate value in evaluation. The use of these tests has become an accepted technique for determining achievement, capabilities for further education, and probable job success. The Army uses them to classify soldiers and to select candidates for officer training. Many colleges and univer

sities use them to classify students or to screen applicants for enrollment. The ability to do well on standardized examinations, then, is likely to be important in the later life of students in our elementary and secondary schools. Consequently, students should become familiar with the general form, the procedure for recording answers, and the typical test situation, so that they will be able to forget such details and make their best showing when they are asked to take a standardized test in an important life situation. The acquisition of skill in taking objective examinations has, for good or bad, become an educational goal that is important to nearly all pupils.

Common examination goals. The ideal way to appraise the results of our instruction would be to test each pupil's ability to use his classroom learnings in real-life situations. Obviously such direct appraisal is impossible, except on special occasions. So we resort to the next best thing—the pencil-and-paper examination, which is really a substitute for a real-life situation. The value of any examination depends on how closely the problems it poses duplicate the life problems that we are preparing the child to solve. Neither the facts and principles that it tests nor the scores that it leads to are ends in themselves. The value of facts and principles lies only in their later usefulness, and the value of scores lies only in the prediction they give of a pupil's ability to make later use of his knowledge or in the guidance they give him in improving his study habits.

All examination questions, then, either essay or objective, written or oral, should encourage the child to apply the facts and principles he has learned rather than merely to recite them parrot-fashion. Questions should emphasize *why* and *how*, rather than *who*, *what*, *when*, and *where*. For example, the invention of the cotton gin in a particular year is of importance primarily because it made slavery profitable and thus was a contributing cause of the Civil War. The exact date of the invention is of little importance in itself. A test question that requests only this date will not show whether the student is aware of the sequence of events of which it is a part.

Conclusions

EVALUATION will be one of your most important responsibilities as a professional teacher. It is not the responsibility of the professional test-maker, although he can be of help to you as you devise appraisal techniques suited to the individual children with whom you are working. It is not even the immediate responsibility of the school administrators, counselors, or psychologists, although they will obviously be able to help you, and they will certainly be interested in seeing that you carry out your responsibility. Effective evaluation of educational progress can be carried out only by you, because you are the only one who will have an opportunity to live with boys and girls day by day, to understand their needs and their abilities, and to match their classroom experiences to the problems that they are likely to meet outside the school environment.

There are various levels of evaluation. At the lowest level, you can evaluate the pupil's ability to memorize isolated, unrelated facts that happen to arise in a specific subject-matter course. At the highest level, you can evaluate the pupil's mastery of the skills and knowledge that are essential to effective living in a democratic community. The choice is always yours. If your day-by-day instruction emphasizes fragmentary details and unsatisfactory experiences, you must suit your evaluation to the kind of learning situation you have created. But if your instruction emphasizes the patterns that underlie isolated facts, the behavior that leads to the satisfaction of deep-seated motives, and the rewards that can be gained by applying knowledge to real-life situations, you can safely base your evaluation on the whole child's performance in an effective learning situation.

In our discussion of evaluation, we have talked a great deal about goals and objectives—the goals of specific courses, the goals of specialized study, the over-all goals of the school, long-range goals and short-range goals. And you can see the reason for this emphasis. We evaluate progress toward some ultimate outcome.

Unless we know from the start what the goals of our instruction are to be, we can do no more than go through the motions of evaluation.

In a sense, evaluation is the culmination of your professional activities. It is the point at which you see the concrete results of your efforts to guide children toward worthwhile learning. But never be deluded into feeling smug about how well the children you are working with compare with the nameless children who have contributed to the ready-made "norm." Evaluation is not a pleasure to be reserved for special days at the end of the unit or the close of the year. It is a continuous, never-ending process that enriches every hour and every day of the life that you and the children share in the classroom.

Problems and projects

1. Construct two true-false, two multiple-choice, two completion, and two essay questions to test a student's knowledge of the cause-and-effect relationships contained in the present chapter, or his ability to apply the facts and principles presented.

2. List some of the dangers that you see in using the essay examination. In using the objective examination.

3. List as many objections as you can to the suggestion that grades in the elementary school and the high school should be based on performance in relation to ability rather than on actual achievement.

4. Should the grade in this course be based on ability and background rather than on the actual status of each student at the end of the course? Why or why not?

Suggested reading

Lefever, D. Welty, Archie M. Turrell, and Henry I. Weitzel, *Principles and Techniques of Guidance*. New York: The Ronald Press Company, 1950. Chapter 11, "The Testing Program," pp. 261-311. (This selection discusses the areas of testing included in a school guidance program. It lists and describes standardized tests in many areas.)

Additional resources

- Anderson, Howard R., Elaine Forsyth, and Horace T. Morse, "The Measurement of Understanding in the Social Studies," *The Measurement of Understanding*, 45th Yearbook of the N.S.S.E., Part I (1946), pp. 71-103. (A discussion of some of the goals of instruction in the social studies and sample items for testing understanding.)
- Cook, Walter W., "Evaluation in the Language-Arts Program," *Teaching Languages in the Elementary School*, 43rd Yearbook of the N.S.S.E., Part II (1944), pp. 194-214. (Some techniques for evaluating in the language arts—directed observation, quality rating scales, objective tests.)
- Cronbach, Lee J., *Essentials of Psychological Testing*. New York: Harper and Brothers, 1949. Chapter 12, "Measures of Achievement," pp. 270-302. (Discusses objectives as well as dangers in achievement testing, achievement test batteries, reading tests, and performance tests.)
- Lindquist, E. F. (ed.), *Educational Measurement*. Washington, D. C.: American Council on Education, 1951. (A collection of articles on various phases of measurement and evaluation—extensive bibliographies.)
- Sims, Verner M., "Evaluating Progress Toward the Satisfaction of Needs," *Adapting the Secondary-School Program to the Needs of Youth*, 52nd Yearbook of the N.S.S.E., Part I (1953), pp. 251-273. (A general statement of the philosophy of evaluation.)
- Sueltz, Ben A., Holmes Boynton, and Irene Sauble, "The Measurement of Understanding in Elementary-School Mathematics," *The Measurement of Understanding*, 45th Yearbook of the N.S.S.E., Part I (1946), pp. 138-156. (Instructional aims and specific examples of test items to measure understandings in arithmetic.)

PART THREE *Motives and problems in the life of
the individual*

CHAPTER 13 *The goals and problems
of human adjustment*

CHAPTER 14 *The psychological basis of
behavior problems*

CHAPTER 15 *The individual child in the
classroom*

CHAPTER 16 *The mental health of the
teacher*

*The goals and problems
of human adjustment*

To play an effective part in the development of the whole child, we must have clearly defined goals. We must know the life problems that the child must solve and we must learn to recognize the patterns of behavior that indicate a normal and happy development and those that are symptomatic of abnormal development. And having learned to recognize danger symptoms, we must know the ways in which the school can redirect the behavior of the child into desirable channels.

In the preceding chapters, we have studied each of the broad areas of human development. We have observed the typical patterns of physical, emotional, social, intellectual, and attitudinal development and the wide range of individual differences that exist within the pattern. We have seen that human behavior is energized by strong forces, or motives, that demand a solution to the problems presented by the environment. Some of these motives are physiological; others are psychological. We know that well-developed habits tend to perpetuate themselves. A knowledge of this complex group of motives equips us to understand the "why" of human behavior.

We have observed how the individual can modify his behavior in order to solve the problems presented by his environment, and how, through his ability to remember, he can preserve these adaptations and use them to meet future problems. We have studied the conditions under which learning is most efficient and retention is

most permanent. We know that all learning (desirable and undesirable)—physical skills, factual knowledge, personality patterns, philosophy of life, attitudes, interests, and social adjustment—is governed by the same general principles. All learning is energized by the same motives, influenced by the same kinds of environmental forces, and dependent upon the developmental status, experience, and ability of the learner.

Our purpose in studying the trends and individual deviations in human development, the power and scope of human motivation, and the principles of learning and retention has been to develop skill in creating effective learning situations. We have searched for information that is likely to be of particular value to you, the classroom teacher. We have seen that the complexity of your task is tremendously increased by the problem of *individual differences* in rate and level of development. We have seen how important it is to meet this problem squarely. It is both undesirable and impossible to mold all children to fit the same adult pattern.

Now we shall see how all this information can help us to set well-defined objectives that will serve to guide us in our attempts to influence the development of the child's behavior. Unless we have objectives, we have no right to attempt to modify the child's behavior. Without objectives, the changes we bring about are as likely to harm the child as they are to help him.

One way to identify our objectives is to start with the end-result—that is, to examine the behavior of adults who appear to have achieved satisfactory solutions to the major problems of life. We can look at the general patterns of normal development, and observe some of the habits of adjustment, both good and bad, that the adult members of the community have adopted. Working back from that point, we should be able to locate some of the roots of the desirable and the undesirable behaviors. Then, if we can identify the earliest symptoms of these behaviors, we should be able to decide what types of child and adolescent responses we should nurture and what types we should attempt to modify. And, in our search for the symptoms, we may gain some clues to the most effective means for guiding behavior toward desirable objectives.

with the customs of the cultural groups with which he is to live and work.

How near any one person can approach the ideal goals of adjustment depends upon numerous environmental forces and upon his ability to discover and learn appropriate behavior whenever he comes face to face with new problems. He will encounter many important problems all the way along—during infancy and early childhood, during adolescence and adult life. We are safe in setting ideal patterns of behavior as our developmental objectives only if we appraise each child's progress toward the ideal in terms of his individual capabilities and limitations.

Emotional stability

Characteristics of the emotionally stable adult:

1. He has a feeling of security based on a belief in his personal competence. He rejects overdependence on others and values independence of thought and action.

2. He makes decisions when they are needed; he does not worry unduly about matters that are not ready for his immediate attention.

3. He has learned to accept life, recognizing that joy and sorrow, health and sickness, will be his lot and the lot of those he loves. He does not ruin his enjoyment of the present with undue concern over vague, ill-defined disasters that may mar his future comfort and happiness.

4. He has learned to accept and to respect himself. He has found his place in life and believes that his contributions to the community are worth while.

5. He can face the unpleasant, receive criticism gracefully, and profit from his mistakes.

6. He has achieved freedom within the socially acceptable patterns of emotional expression. He is able to relax, to laugh, to love, and to enjoy life.

7. He gains emotional satisfactions from music, art, literature, sports, hobbies, and the companionship of others.

8. He is consistent in his feeling toward life. He does not show violent day-to-day variations in mood.

Some problems and trends in emotional development. The road to mature emotional adjustment is made up of many developmental steps from early childhood to adult fulfillment. At the outset, the infant relies upon his parents for all the things that, as an adult, he must provide for himself. He is insecure except when he is protected by his parents. He depends on them for food, clothing, and luxuries. The human infant is the most helpless of animal children. Adult emotional stability does not flower, full-blown, at some magic time in adolescence. It begins its growth during early childhood. If the parents encourage the child to make small decisions for himself, he learns to plan his actions and to accept responsibility for them. For example, he must gain confidence in finding his way around the neighborhood before he is ready to take adult responsibility for making long trips.

As the child grows older, the school shares the task of providing experiences that nurture emotional stability. By individualizing instruction and appraisal, the school helps the child to accept and to respect himself. By encouraging him to tackle problems that he is able to solve, it develops in him a feeling of competence and security. And it is from this basic sense of security that he derives freedom of emotional expression and the ability to enjoy life. Parents and teachers, working together, can increase the child's feeling of security by providing him with training in cooperative social behavior and sound sex education.

As you work with the child day by day, you can help him to accept and profit from criticism. In the democratically conducted classroom, where the child himself helps to evaluate his own accomplishments, he learns to welcome suggestions. "Pigheadedness" starts with the parent who says, "My way is *the* way," and it is fostered in any classroom where facts are learned but never questioned or discussed.

Emotional maturity cannot be measured on a single scale or in a single environment. It must be appraised in many different contexts. A child may be confident, relaxed, and capable when he

faces one situation, but fearful, tense, and incompetent when he faces another. At the highest level of emotional maturity, the individual faces every new situation with assurance and confidence. The child develops flexibility only by practice in meeting many different types of problem situations. You must not shield him from his problems through overprotection. Instead, you must actively set about to provide him with experiences in cooperating with his peers, in witnessing and participating in music and sports, in taking part in school-sponsored trips of many kinds, and in sharing in the activities of the democratically conducted classroom. All these experiences prepare him to face new problems without undue anxiety. Only through meeting and solving new problems does the child learn the ways of emotional maturity.

Social maturity

Characteristics of the socially mature adult:

1. He exhibits a high degree of cooperative behavior. He is able to work with a group without feeling compelled either to dominate it or to withdraw from it. He is able and willing to accept responsibility for leading, but he is also able and willing to follow.
2. He has freed himself from the extreme domination by his social group that is so characteristic of the adolescent. He shows some independence in his choice of beliefs, interests, clothing, vocabulary, and life goals.
3. He is free from prejudice. He judges others according to their merits, not the group to which they belong. He accepts each individual as having potential worth, and he does not allow early conditioning to influence his judgment of a person whom he is meeting for the first time.
4. He evaluates others on the basis of their strengths as well as their weaknesses.

Some problems and trends in social development. The young child either dominates or is dominated, but during middle childhood he begins to react to group pressures. He must follow the

current fads in haircuts, toy guns, or clothing. By adolescence the social group carries a tremendous pressure to conform. Adolescents must talk alike, dress alike, eat the same foods, and have the same heroes. Not until the adolescent has attained considerable maturity and security does he feel that he can depart, without fear of penalty, from the mold into which his fellows have forced him and into which he has forced others. If a child's parents permit him to do and have everything he likes "because all the other kids do," his adult life may become an endless struggle to "keep up with the Joneses." Both teachers and parents must be sensitive to the fine distinction between hurting the child's chances of becoming an accepted member of the group and helping him to develop independence of thought and action.

Prejudices are barriers to full social development. Often the child accepts them, without reservations, from adults. The prejudiced child is unable to recognize that there can possibly be anything desirable about a person or an idea against which he is prejudiced. Of course, almost all adults retain certain prejudices. But we must set as a logical goal of social development the removal of prejudices and the development of an ability to judge and accept each individual on his merits.

As with emotional development, social development cannot be measured on a single scale or appraised in a single social setting. Social maturity calls for a flexibility that enables the individual to adjust to a variety of social groups and situations.

Intellectual maturity

Characteristics of the intellectually mature adult:

1. He has an active curiosity concerning the world about him. He wants to know the causes of events and how they will affect the future.

2. He continues his intellectual growth through careful observation, broad reading, and skillful listening.

3. He has formed the habit of evaluating new information in terms of what he already knows.

4. He demands evidence, seeks data, and evaluates the sources of his information.

Some problems and trends in intellectual development. Intellectual growth should not cease with the attainment of physical maturity; it should continue throughout adult life. The adult uses all reliable sources of information; he does not limit himself to television programs, newspaper articles, or popular magazines. And he evaluates what he hears and reads. The child holds anything that is printed as sacred and true; the adult uses his full background of knowledge to interpret what he reads. He does not simply *add* new information as a series of isolated items; he *integrates* it with the background of knowledge he already has.

The child depends on others, particularly on teachers and parents, to interpret the world about him. As he matures, he must gradually outgrow that dependence. Intellectual maturity is nourished by a desire for evidence and by the ability to evaluate sources of information. By strengthening the child's curiosity and by teaching him how to go about satisfying it, the school can foster an intellectual maturity that will enrich his entire adult life.

Membership in the family unit

Characteristics of adult family adjustment:

1. Both partners consider marriage a normal step in their development.
2. Each expects to share leadership in the family unit with the other.
3. Each accepts a share of the responsibility for rearing and caring for children.
4. Each is mature enough to welcome the children to the decisions, labor, and fun of the home.

Some problems and trends in the development of the family unit. Marriage and adjustment to its demands are ultimate developmental goals. The best possible preparation a child can receive for

marriage is to live in a home where the marriage relationship reflects love, respect, and cooperation. But ultimate success in marriage demands a high level of social and emotional maturity. Home and school experiences that further cooperative social behavior and security prepare the child to share leadership in a family unit.

Both boys and girls must come to realize that marriage is based on more than just physical love. Both in elementary school and in high school, they need to learn that marriage is "life work," and that it demands a great deal of cooperation and mutual sacrifice.

Before he is able to make a satisfactory adjustment to family leadership and responsibilities, the individual must have emerged from parental domination. The new family unit cannot remain a subsidiary of the old one. When the individual marries, he must surrender some of his independence and substitute in its place an interdependence. That is the only way in which he can enter into full partnership with another adult in a family unit.

Sexual maturity

Characteristics of the sexually mature adult:

1. He has achieved a relationship with the marriage partner that is satisfying and that is restricted to the partner.
2. He bases his sex behavior on love, respect, and consideration for the emotional needs of the partner.

Some problems and trends in sexual adjustment. To the young child the matter of sex difference is of little or no concern. His choice of playmates is dictated almost solely by their proximity. Somewhat later, during the early school years, he tends to restrict his play group to members of his own sex who have interests similar to his own. The onset of pubescence brings a social problem. Girls, maturing at an earlier age than boys, begin to feel the need for social experiences with boys. But most of the boys of their own age-grade group are as yet uninterested in being involved in such social outlets as parties and dances. It is an unfortunate fact that

at the very time girls have their greatest need to begin their development in the social graces, they are restrained from doing so by the immaturity of the boys of their age.

As boys and girls progress further into the adolescent period, the extent of social acquaintance is no longer closely bound by the classroom and age groups. By this time, the adolescent chooses his friends on the basis of their maturation and mutual interests. His interest in members of the opposite sex may be general or he may restrict it to but one person at a time, changing the objects of his interest in rapid succession. As he approaches adulthood, his interest narrows to one or two members of the opposite sex and finally he chooses one person as his exclusive love object.

Certain special problems are related to the development of sexual adjustment. Since marriage is sometimes delayed by a long period of occupational training, various threats to satisfactory adjustment have time to develop. Masturbation is fairly common among girls and is nearly universal among boys. Some adolescents adopt particularly maladjusted forms of behavior. Instances of extreme masturbation and homosexuality certainly are frequent enough to deserve careful study by both teachers and parents. We must plan experiences that can be shared by boys and girls of about the same physical and social maturity. The removal of special social handicaps, such as the inability to dance, may be as important to the child's adjustment as the removal of a reading deficiency.

Vocational competence

Characteristics of the vocationally competent adult:

1. He has made a vocational choice appropriate to his abilities and interests and has completed the necessary training for that vocation.
2. He is eager to develop increased vocational competence.
3. He has work habits that enable him to complete tasks even though they do not furnish immediate rewards. Since many jobs include fairly long periods of dull routine, the adult must learn to endure them without serious loss of productivity.

4. He has come to accept his place in the world of work. Although he is alert to better opportunities, he gains happiness from his present tasks and status.

5. He believes in the dignity and importance of the vocation that he has chosen.

6. He is able to gain pleasure from a job well done.

Some problems and trends in vocational adjustment. The average adult must work to earn a living. Much of his waking time is spent in some sort of labor. Logically, then, he should choose a vocation that he finds satisfying, that is within his capabilities, and for which he can secure adequate training. It should be suited to his interests, personality, and habits of life. The ideal vocation satisfies needs in addition to the need for financial security. A job that satisfies the desire for new experiences, self-respect, and the regard of others contributes much to the worker's personal well-being and efficiency.

The pattern of ultimate vocational adjustment begins to take shape during childhood. The young child exhibits an early interest in the choice of a vocation, but his choice is largely governed by the seeming glamour of adult occupations. Perhaps the greatest step that the child can take toward vocational adjustment is to develop adequate work habits and a satisfactory emotional and social adjustment. In the classroom, we can teach the child to carry tasks through to completion. Even the very young child can be taught to put away his toys. As he grows, his responsibilities should grow too. He should learn to accept certain responsibilities that seem important to him in his family or group life. By the time the individual has reached adolescence, he should be thinking seriously about choosing a specific vocation from among those for which he possesses the intellectual and physical requirements.

Wide experience in extra-curricular activities and in elective courses gives the student an opportunity to acquire skills and find interests that will contribute to his vocational adjustment. Through personal counseling based on the information that we obtain from vocational interest inventories and other devices, we can help him understand his vocational aptitudes and interests and make wise plans for obtaining suitable training.

Economic security

Characteristics of the well-adjusted adult:

1. He has adjusted his standard of living to his income.
2. He provides financial protection for his dependents.
3. He saves for his future financial needs.
4. He budgets his income wisely.

Some problems and trends in economic adjustment. The child who is completely dependent on his parents for the satisfaction of his financial needs has no chance to learn how to earn and spend money wisely. He receives no training in assuming financial responsibility for himself or for his future dependents. Only through practice, with its attendant failures and successes, can he learn to adjust his standards of living to his income and learn to budget wisely.

He must be allowed to handle small amounts of money before he can learn to handle larger amounts. He must encounter small frustrations brought on by failure to plan for the future before he can learn to avoid serious difficulties. He must sample the pleasure of earning money to fulfill his needs before he can understand fully the importance of regular work. Earning money must be made a rewarding experience to the child, and he must be allowed to take increasing responsibility for his own support before he can become ready to assume the support of others.

Few of us work for the love of work alone. Work must be a means for satisfying needs. The child must progress toward economic maturity as a part of his general development toward adulthood.

Skill in using leisure time

Characteristics of the well-adjusted adult:

1. His play activities have become specialized and skillful.
2. By distinguishing between the time for play and the time for work, he gains greater freedom for his play activities and greater efficiency during his work periods.

3. His choice of play activities is compatible with his economic status. Thus his recreational activities do not threaten his general economic adjustment.

Some problems and trends in learning to use leisure time effectively. In this phase of development, as in others, the adult has come a long way from childhood, when his play activities followed his moment-to-moment variations in mood or the whims of his teacher or parents. Throughout adolescence, play is extremely active and closely involved with social and sexual interests. The leisure-time interests of the typical adolescent are tremendously varied and somewhat unrelated to each other; the adult's range of interests narrows, and his interests are likely to become closely related to each other and to his vocation.

A philosophy of life

Characteristics of the adult with a satisfactory philosophy of life:

1. He has goals, values, ideals, attitudes, and general principles of conduct that govern his actions and give stability to his behavior. He has made an adjustment to social living that is satisfying to himself and to others.

2. He has faith in the future.

Some problems and trends in the development of a philosophy of life. The well-adjusted adult has found his place in the world and obtains satisfactions from his status and contributions to the community. His decisions and goals are governed by a set of ideals that give stability to his personality. Others can predict his behavior, and he can predict his own behavior, in almost any situation. An integrated and consistent philosophy of life leads to a tremendous saving of energy and the removal of many worries about future exigencies. Since a philosophy of life consists of more or less pre-made decisions, the individual knows how he will act under the stress of temptations, interruptions, and failures.

A philosophy of life is seldom stated in terms of grand ideals; rather, it is a framework that determines the actions of the indi-

vidual. It includes his concept of himself and his pride in the way he meets the problems of life. To say that an individual has a fine philosophy and fine goals but that he frequently falls short of attaining them is a misstatement. His actions are his philosophy. He has a fine philosophy and fine goals only if he exhibits fine actions.

The adult's philosophy of life requires many years for development. During childhood, many of the individual's decisions are made by his parents. When he does make decisions for himself, he is usually guided by the relative attractiveness of immediate goals. He has little in the way of a moral code, and is seldom guided by preconceived plans of action. He acts in the way that will make him as happy as possible in the immediate situation.

Most adolescents, consciously or unconsciously, spend a great deal of energy in attempts to formulate a philosophy of life. Decisions that the adult makes almost automatically now require sleepless nights and a great deal of nervous tension. The adolescent learns that, much as he desires the respect of all his peers and of all adults, he must decide what peer group he will associate himself with and which adults he wants to think highly of him. He is forced to make choices, knowing that if he follows the code of one group he will be rejected by another. Making these choices is essential to his progress toward the formulation of an adult philosophy.

The interrelationship of all areas of adjustment

WE FIND that the adult who shows a high level of adjustment in one area is likely to show high-level adjustment in other areas. The experiences that foster security and self-respect also foster emotional and social adjustment. The emotionally and socially mature person is most likely to achieve intellectual maturity, good family adjustment, satisfactory adjustment to sex, ability to meet his financial needs, good vocational adjustment, satisfying use of his leisure time, and a well-integrated and socially acceptable philosophy of life.

In order to recognize behavior that is indicative of maladjustment

and to know what type of behavior to substitute for it, we must first identify specific patterns of behavior that indicate high adjustment in each area. However, we know that experiences that help the child to maintain his self-respect, that enhance his feeling of security, and that allow him to savor the esteem of others are likely to help him grow toward satisfactory adjustment in all areas of personality development.

Some developmental problems

As we study the process of adjustment, we find certain life problems that are common enough to justify individual examination. Some of these problems persist for a long period of time and few if any persons achieve perfect solutions to them, even though they make continuous progress. Many of the problems that arise in attaining emotional stability, social and intellectual maturity, and vocational competence are of this kind. The individual must continue to develop competence in meeting such problems throughout his adult years.

Other problems are met and solved once and for all during relatively short periods of time. Since most of these problems occur during childhood, the solution that each child works out is of critical importance in determining the manner in which he will approach later problems. You should recognize that the child's successes and failures in retaining his security and self-esteem while he learns to walk and talk, learns bowel and bladder control, and learns to read and to accept the role of his own sex are important determinants of his later emotional and social adjustment. If he loses his security and fails to obtain satisfactory response from others in meeting these early developmental problems, his later problems will become increasingly difficult for him to solve.

Still other problems are not closely associated with any one stage of development and are difficult to classify within any of the broad areas of adjustment. However, the child's experience in trying to solve them strongly affects his general feeling of security and thus influences his adjustment in all areas. We shall study the implica-

tions of the most common problems that children must learn to solve.

We are primarily interested in the problems of the child after he has entered school. But we cannot understand the elementary-school child and the forces that make one child different from another unless we know the problems that he has encountered in his earlier years at home. And when we work with the adolescent, we must remember that he has faced problems both in the home and during his years in the elementary school. Of course, if as a child he met his problems successfully, his new problems will be easier for him to solve. He has had experience in problem-solving and he has developed a philosophy of life that will help carry him through new crises. But if the adolescent carries with him numerous unsolved problems from childhood, the task of solving both the new and the old problems will be tremendously difficult for him, and he will probably need considerable help from the school.

Adults as problems. Those who have studied the forces that create maladjusted and antisocial behavior often say that we do not have "problem children"; we have "problem parents." Parental authority and domination create real problems for every child. He must learn his place in the home and his rights and duties. This is particularly difficult for him because the attitudes, moods, and day-to-day problems of his parents often make their responses unpredictable.

For years, the child is incapable of meeting his physical needs for survival without the aid of adults. His security, both physical and emotional, is in the hands of his parents. He needs to feel sure of their love before he can give full attention to solving the other less immediate problems of his world. His security and his readiness to meet new problems in and outside the home are determined by how sure he is of his parents' love and by how surely he can predict their responses to his acts. As we know, the child's emotional adjustment is more affected by the consistency of parental behavior than by its severity. But dependence on his parents must not persist indefinitely. At any early age, the child must receive training in assuming responsibility if he is to be ready for a later emancipation from the home and an acceptance of his adult responsibilities.

The habit patterns of regularity in eating and sleeping, of care and cleanliness of self and clothing, and of respect and consideration for others are acquired during childhood. They form a basis for the self-security that must ultimately replace the security provided by parental protection.

Siblings as problems. Any individual with whom the child comes into daily contact creates problems. The child's birth-order in the family determines in part his relationship with his brothers and sisters. An eldest child learns to expect the undivided love and attention from parents, grandparents, and other adults. The arrival of a new baby, particularly if the child is unprepared for it, disrupts his daily life and interrupts the flow of attention that he has learned to expect. Part of the time that the parents formerly spent playing with him now goes to caring for and admiring the new child. The older child may have trouble finding new activities to fill his time. His sense of security and feeling of importance are threatened. In his attempts to re-establish himself in the family group he may develop temper tantrums and various illnesses. The wise approach is to make him a full partner in planning and caring for the baby. In the classroom, you can help the child derive prestige from having a baby brother or sister and thus help him to accept his new responsibilities.

The presence of an older sibling in the family group creates special problems for the younger child, particularly if the older child has felt threatened by the birth of the younger. The younger child may need help in adjusting to the physical domination of older children or in throwing off an over-reliance on the protection of older children that keeps him from meeting his own problems. In the classroom, you can give such a child opportunities to assume responsibility and to help younger children.

Playmates as factors in development. The child must not be over-protected from his world. He must learn to deal with his peers. Only in this way can he prepare for citizenship and learn to follow the rules of the group. He learns what behavior is acceptable to the group and what behavior is unacceptable. If he cheats, is selfish, or resorts to crying or temper tantrums in order to get what he

wants, he soon finds that his behavior has excluded him from the play group.

Bullies and bad little or bad big boys and girls are a part of the world at all age levels and the child must learn to deal with them. Parents should exercise some control over the child's choice of playmates, but they must be careful not to become inflexible and dictatorial in their control. During the earlier years, the child seldom persists in his choice of playmates if his parents oppose it strenuously. For the adolescent, however, overt parental opposition may endow the opposed friend with a glamour that he would not otherwise have had. The opposition may serve only to strengthen the adolescent's choice as he strives to overcome what seems to be a threat to his security and independence.

When a child moves to a new neighborhood, he often needs help from his parents in achieving acceptance by his peers. There are several things parents can do. They can provide attractive play equipment, occasional refreshments, or the use of a playroom free from parental domination. Or they may arrange a party for the child's age mates in order to give him importance in their eyes.

You can be of service in the classroom by seeing that a new child is accepted rather than rejected by the group. Children enjoy responsibilities and tend to become interested in another child for whom they have rendered a service. Helping another bolsters one's own security and self-esteem. Encouraging specific children to act as guides for the new child, to teach him the school songs, and to work with him in groups or committees may pave the way for ready acceptance by his peers.

Problems of the child in the school. When the child first enters school, he encounters a bewildering mass of problems. He finds that the school is dominated by adult authority and peopled with strangers of his own age. He cannot achieve the undivided love and attention that he has received at home. His ability to adjust to the new problems created by the school will depend in part upon the experiences he has had at home. If he has been dominated by parents or siblings, he may seek to dominate younger or weaker

children; if he has been sheltered, he may be timid and fearful; if he has been a cooperating member of the family, his adjustment to the school will probably be easy.

A primary reason for nursery schools and kindergartens is to give the child a chance to approach the social and emotional problems of the school in a leisurely fashion and with careful guidance. The fact that he experiences this new environment for short periods of time, during which the teacher skillfully combines work with play, helps the child to bridge the gap between home and school.

Physical maturity as a problem. The advent of adolescence introduces social and emotional problems as well as physical problems. We have examined most of these problems in separate chapters. To adults, the problems of the adolescent, with his changing voice, awkwardness, giggles, new-found awareness of the opposite sex, pimples, and blushes, are often a subject for amusement. But for the adolescent they are deadly serious and often terrifying. Although most adolescents adjust to them rather smoothly, you must be careful to treat the adolescent with dignity and understanding.

The continuing adjustment of the adult

THE PROCESS of adjustment does not come to an abrupt end when the adolescent enters adult life. There are many developmental problems peculiar to adult life. Cooperative living with another person requires constant adjustment. The demands of the adult's occupation change with the years, and the adult must keep abreast of them if he is to remain competent and satisfied in his work. In later years he faces the problem of retiring from his vocation and devoting full time to an avocational pursuit. Sickness and death disrupt his emotional and social solutions and force him to make new adjustments. As is true at any level of development, if the adult has acquired an adequate philosophy of life and a high level of emotional and social adjustment he can adjust to new demands and can continue to obtain satisfactions from what life brings to him.

If his philosophy and general adjustment are inadequate, he may find it impossible to make satisfactory adjustments to his new problems.

As we study the behavior of adults, we find that many adults are adult only in size or age, and have not achieved all the developmental goals that serve as criteria of maturity. Many adults *do* have prejudices; many adults *do* depend on their mother and father rather than on themselves. Some adults do not attain financial security; some remain immature in their sex interests; and some fail to develop a consistent and well-integrated philosophy of life. Few if any adults are completely mature in all the areas of development. We have attempted merely to formulate ideal goals of adjustment to guide our attempts to influence the child's development in the classroom.

General habits of adjustment

EACH individual acquires his own habits of adjusting to life. As the child matures, he tends to limit his attack on new problems to the approaches that he most often has found successful. Soon his methods of approaching problems become so typical that they function as well-established personality traits. These traits become an important part of his own conception of himself. He comes to see himself as aggressive or modest, persistent or flexible, generous or selfish, and, finally, he accepts himself and his personality traits as worthy and desirable. From that time on, he actively resists any substantial modification.

Certain personality traits become typical of the individual early in his childhood. By the time he becomes an adult they are deeply ingrained. Many of the general habits of adjusting to problems occur so frequently in human behavior that they have been studied intensively and have been given special names. The habits of adjustment that we shall discuss here are a part of all human behavior. Each of us uses them in one kind of situation or another.

The general nature of habits of adjustment. When we think of

personality traits such as introversion or extroversion, aggression or withdrawal, we tend to classify everyone at one extreme or the other. We say, "John is an introvert; Jane is an extrovert. Dick is aggressive; Jack is withdrawn." Fortunately, however, the situation is not that simple. Actually, few persons are purely introverted or purely extroverted. Most are introverted at some times and in some situations and extroverted at other times and in other situations.

This refusal of individuals to submit to tidy classifications means that we run into a difficult problem when we seek to evaluate habits of adjustment. We can seldom say that one extreme is better than the other. We have no way of knowing whether it is really better to be extroverted or to be introverted. It may be that averageness is most desirable, or, on the other hand, it may be that the world is better for having persons who possess different amounts of such traits as introversion or extroversion. It may even be that an individual's possession of certain traits bears little relationship to his happiness or to his contribution to the welfare of the group.

What we can say is that different individuals approach new problems in different ways: Some attempt to solve a problem by destroying the barrier, by climbing over it, or by finding another route to the goal. Others substitute an equally satisfying goal that is not so well protected by barriers. Others avoid failure by withdrawing altogether. And still others remain where they are, facing the barrier, wanting to reach the goal, but doing little about it.

The larger problems of life ordinarily cannot be thought of as blocks or solid barriers to be climbed over or passed by. They are made up of smaller particles that call for numerous day-to-day or minute-to-minute adjustments and decisions. Some of life's problems are spread over years of time; others are short and sudden in their impact.

Direct attack on problems. It appears that the person who makes it a practice to identify a problem and to attack it as soon as the time is ripe makes the most effective over-all adjustment. However, there are some problems upon which even a well-adjusted individual will not make a frontal assault. He knows that there are times when a different approach is likely to be more effective. But with

some individuals a frontal attack has become habitual; they use it invariably, even when some other approach might be more effective.

There are certain logical steps that can be followed in making a mature, intelligent attack on a problem:

1. Identify the problem. Learn as much as possible about it; identify its weak spots and its strong spots.

2. Spend adequate time deciding what method of solution is most likely to be successful. Determine whether or not the goal is worth the price that must be paid for its attainment.

3. Launch your attack, bringing to bear whatever force appears to be necessary.

4. Evaluate from time to time the progress that you have made toward the solution of the problem.

5. If you succeed in solving the problem, check on the solution and determine whether or not you could have made a better approach.

6. If your attack fails, re-evaluate the problem and decide whether or not you should try another frontal attack. If you decide that you should, again choose a method of approach that seems most likely to succeed.

Substituting different goals. Compensation is a mechanism of adjustment by which we substitute goals that seem easier to attain than the goals that we originally set for ourselves. We all compensate at times. In many situations, compensation provides an excellent means for achieving success and avoiding a feeling of inferiority and failure. One child, recognizing that he is outdone by another in ability to walk on his hands, spends months in a direct attack on the problem. Another child seeks superiority by substituting excellence in something for which he is better equipped. In compensating, we retain confidence in our ability to succeed, but recognize that we cannot always succeed in all things. Obviously everyone cannot be equally excellent in every activity. Each person must pick and choose. We must find the activities that give us security, self-esteem, the esteem of others, and new experiences. We enjoy the activities that lead to satisfaction of our motives. We

feel encouraged to spend more and more time on the activities in which we excel, and thus we gain more and more skill and prestige in them.

There are two steps, then, in the process of compensating through a wise choice of activities. First, perhaps by hit or miss, we find activities that satisfy our needs. Then we specialize in these activities and ultimately decide that they are important in the over-all scheme of things. We may even go so far as to decide that anyone who does not fully appreciate the worth of these activities counts for little in our world.

Compensation takes many different forms. Sometimes it is carried to such an extreme that it becomes a threat to the well-being of the individual rather than a desirable way for improving adjustment. A person may become so thoroughly convinced of his inferiority that he submerges his feeling of inadequacy under a hard shell of aggressive behavior.

The personality traits that we call introversion and extroversion are types of compensation. The introvert has found success when he indulges in reading, listening, and thinking. The extrovert, on the other hand, typically has found satisfaction from the response that he obtains from others. He is happiest in a group. He is the typical salesman, the influencer of people. Although hereditary factors may have some influence on the development of personality traits, the individual's experience with different approaches to problems is by far the most powerful influence. The introvert has usually met with little success in his attempts to influence the actions of others. The extrovert has found that he has gained little praise and esteem when he attempts to manipulate ideas.

Another type of compensation results from our identifying ourselves with others. For example, parents may compensate through identifying themselves with their children—often to the detriment of the children. Many a thwarted actress-mother has forced her daughter to take dancing and speech lessons even though the child preferred sand-lot baseball. Many children in college today are competing at a level out of keeping with their intellectual ability

or their interests simply because their parents, desiring a status that they could not attain themselves, are determined that their children shall become doctors or lawyers.

Withdrawal from life's problems. Withdrawal is a habit of adjustment in which the individual avoids failure by refusing to meet problems. It is the direct opposite of making a direct, frontal attack on problems. Withdrawal is particularly common among young children, and may lead to serious adjustment problems that persist into adult life. Instead of meeting a new problem realistically, the child pulls back into his shell. He develops a fear of new experiences rather than a desire for them, especially if he has suffered an extremely painful failure.

Your ability to recognize the symptoms of withdrawal is of extreme importance in the classroom. The child who resorts to withdrawal offers the greatest possible threat to himself, even though he seldom disrupts classroom activities. He is perfectly easy to have around; he stares quietly out the window; he sits in his seat instead of playing with the other children; he never scuffles in the hall or causes a disturbance; he is a model of behavior. Yet this very withdrawal is a tremendous threat to his well-being. In his search for ways to avoid problems, he has built up a dream world. He substitutes the pleasure of imagined successes for the trouble of striving for real achievements.

In extreme cases, the child may withdraw into actual illness whenever his passive withdrawal proves inadequate. He may refuse to go to school and develop real stomach aches, headaches, and other ailments. If he persists in this behavior through adolescence and into adulthood, he may develop hysterical symptoms whenever he is faced with a difficult problem. Here are the general types of hysterical symptoms:

1. Loss of memory, called *amnesia*. This type is particularly well known and is often mentioned in the newspapers.
2. Loss of sensitivity in any of the sense organs, known as *anaesthesia*. In *anaesthesia*, the individual may become blind or deaf or lose the sense of touch for a specific skin area.

3. Loss of the use of a muscle group, known as hysterical paralysis.

These hysterical symptoms are well known to physicians and psychologists. They occur under extreme conditions of stress—on the battlefield, for example, or under the extreme boredom of holding a dull job for many, many years. Many so-called miraculous cures are no more than the removal of hysterical symptoms. Somewhat less extreme symptoms are the various occupational "cramps," such as writer's cramp and telegrapher's cramp, which protect the individual from a problem that he prefers not to meet.

Fear and timidity are also characteristic of withdrawal. Many timid persons have found that instead of success they reap only failure when they attempt new things. As time goes on, they develop a general fear of failure. In its extreme form, the individual suffers from strong, persisting fears, called phobias. Fears of closed places, high places, animals, water, and deep holes are common enough to have been given special names. Most phobias are created by a single incident rather than by a series of failures in dealing with new situations. They ordinarily have their beginning in a horrifying and shameful experience from which the individual emerges with a strong feeling of personal guilt. This guilt-feeling results in an inability to confide the experience in anyone else, an inability that appears to be an essential element in the development of a phobia.

Persistent nonadjustment. Sometimes an individual remains indefinitely in a state of tension, incapable of taking any positive action. Strangely enough, he appears to gain some degree of adjustment from his very inactivity. He stands facing the problem, desiring his goal but refusing to risk the failure that may follow any attempt to reach it. He pays the price for his indecision in headaches, ulcers, and other symptoms of high nervous tension. The solution to a problem may depend on his giving up one of two goals, both of which he feels he must attain. But, since he is unable to renounce either, he can attain neither. Even though the solution is quite obvious to him, he cannot accept it, since it would mean

that he would have to give up something that he feels is indispensable. For example, the adult who has formed a strong sexual attachment to a member of his own sex, or to a member of the opposite sex already chosen by another, knows perfectly well that the only sensible solution to his problem is to renounce his attachment. By persisting in it, he knows that he has everything to lose: self-respect, the esteem of his fellows, security within his family group, his job, and perhaps ultimate salvation. He knows that the price he is paying for his continued attachment is impossibly high. His loss of sleep, his tensions, and his headaches may ultimately become unbearable, but although he sees the solution, he is so certain that the object of his attachment is indispensable that he cannot renounce it. He remains indefinitely in a state of noadjustment.

Individual differences in problems and habits of adjustment

THE PERSONALITY traits and habits of adjustment that we have discussed are only a few of the more common patterns of behavior. No individual adopts only one of them and forsakes all the others. But these mechanisms are typical of human behavior; we all use them at one time or another. Even a person who seems completely extroverted in most situations sometimes reveals an element of compensation in his behavior. He may conceal his timidity by forcing himself to become the center of attention. Although he is able to make a frontal attack on most problems (particularly those within his own field of interest), he may be forced into withdrawal by a problem in a new field. He may, of course, conceal his withdrawal by suggesting that the new problem is uninteresting or unimportant.

Earlier in the chapter we identified the goals of human adjustment and saw that how far each person advances toward those goals depends in large part on the problems he meets in his environment. Though there are certain problems that nearly all children meet, each child also meets his own peculiar problems.

Special problems are created by the presence or absence of

adjusted children who will ultimately become well-adjusted adults.

Always remember that each child is encountering specific, individual problems that require different types of help. The withdrawn child needs to experience success in attaining the esteem of others; the overly aggressive child needs to taste the success that comes from contributing to the welfare of the group.

In working with the child, remember that all behavior, good and bad, has a cause, and that the behavior itself is only a symptom of the child's attempts to solve his problems. Ordinarily, it is useless to try to treat symptoms. Instead, you will want to try to diagnose the symptoms and then move on to remedy the causes that are responsible.

Problems and projects

1. Try to think of persons you have known who have adopted frontal attack, withdrawal, strong fears or timidity, or illness as habits of adjustment. If you know enough about their history, try to explain why they chose these approaches.

2. What can you do in the classroom to assist the child in each of the broad areas of adjustment discussed in this chapter? (Attainment of emotional stability, attainment of social maturity, etc.)

3. List some of the developmental problems that you encountered in elementary school, high school, and college. How could or did an understanding teacher help you?

Suggested readings

Kuhlen, Raymond G., *The Psychology of Adolescent Development*. New York: Harper and Brothers, 1952. Chapter 8, "Motivation, Adjustment, and Emotion in Adolescence," pp. 237-288. (The special problems of adolescence and common adjustment mechanisms.)

Rock, Robert T., Jr., "Personality Maladjustment and Mental Hygiene," Chapter 19 in Charles E. Skinner (ed.), *Educational Psychology*, 3rd ed. New York: Prentice-Hall, Inc., 1951, pp. 594-620. (Types of adjustment and symptoms of maladjustment.)

Thompson, George G., *Child Psychology*. Boston: Houghton Mifflin Company, 1952. Chapter 5, "Psychological Adjustment: Some General Principles," pp. 175-206. (Emphasis on the forces that determine the personality of the child.)

Additional resources

- Havighurst, Robert J., *Human Development and Education*. New York: Longmans, Green and Co., 1953. (Chapters 1-12, pp. 1-176, contain an excellent discussion of the problems, trends, and goals of adjustment. The case descriptions in Chapters 13-15, pp. 177-253, are also valuable.)
- Levinger, Leah, and Lois B. Murphy, "Implications of the Social Scene for the Education of Young Children," *Early Childhood Education*, 46th Yearbook of the N.S.S.E., Part II (1947), pp. 15-43. (The child's problems, with emphasis on the rural and small-town child.)
- Patty, William L., and Louise S. Johnson, *Personality and Adjustment*. New York: McGraw-Hill Book Company, Inc., 1953. Chapter 11, "Courtship and Marrying," pp. 243-273. (Emphasis on the attainment of sexual maturity and the development of the family unit.)
- Snygg, Donald, and Arthur W. Combs, *Individual Behavior*. New York: Harper and Brothers, 1949. Chapter 7, "People Under Threat: The Anatomy of Maladjustment," pp. 114-143. (A discussion of tensions and how they may lead to feelings of inadequacy.)
- Tiegs, Ernest W., and Barney Katz, *Mental Hygiene in Education*. New York: The Ronald Press, 1941. Chapter 15, "Analysis and Treatment of Sexual Difficulties," pp. 313-331. (Discussion of the incidence, prevention, and treatment of problems of sexual adjustment.)
- Tryon, Caroline, and William E. Henry, "How Children Learn Personal and Social Adjustment," *Learning and Instruction*, 49th Yearbook of the N.S.S.E., Part I (1950), pp. 156-182. (Emphasizes the learned nature of adjustment and discusses developmental tasks from early childhood to late adolescence.)

The psychological basis of behavior problems

If a child fails to win security and recognition and to satisfy his curiosity in a socially acceptable manner, he will attempt to do so in some other way. Although agencies other than the school must share in guiding the development of the child during his school years, the teacher and the school have a major responsibility. Success within the school is particularly important to the child who has difficulty in satisfying his basic needs in the home and the community. Consequently, a teacher must understand the home, school, and community pressures that are the basis for behavior problems and must know what the school can do to guide behavior into socially desirable pathways.

We have already seen how patterns of behavior are acquired and how they can be modified. We know that all behavior—both desirable and undesirable—is learned. We know the motives that compel us to learn and the general rules that govern learning. And, in the preceding chapter, we identified the broad goals toward which we seek to direct the child's development and the general developmental problems that all children encounter.

Every child needs the security and guidance that can be supplied only by his family, his school, and the adults of his community. Even with the best guidance that these agencies can offer, however, many children have difficulty in solving their regular life problems in a socially acceptable manner. And the struggle is even harder

for children who are faced with special problems in addition to those that all children must face.

In the classroom, then, we must be prepared to meet countless challenges as we try to help each child find socially acceptable behavior that satisfies his needs. Juvenile delinquency and adult crime are not mere philosophical concepts. They are serious threats to the general social welfare. And these major deviations in behavior grow from the minor deviations observable in the classroom and on the playground.

Once again, we see how valuable our knowledge of behavior and motivation is in dealing with the day-to-day situations that arise in our work with boys and girls. When their physiological, psychological, or habit motives are unsatisfied, tensions arise that compel them to act. Although most physiological motives are relatively easy to satisfy, everyone constantly seeks new and interesting experiences and strives to nurture his security, self-esteem, and esteem in the eyes of others.

We use these psychological motives to build effective learning situations in the classroom. But the same motives can lead the child to learn socially undesirable forms of behavior. After all, the child's purpose is to satisfy his needs. It is our adult responsibility to see that he does so in a socially acceptable manner. Unfortunately, however, not all children manage to discover socially acceptable ways to satisfy their needs. Some, because of chance or example, find that dishonesty, untruthfulness, aggression, and truancy—and, later, delinquency and crime—offer at least partial satisfactions. In time, undesirable as well as desirable behavior can become habitual. Childhood behavior problems differ from delinquency and adult crime only in degree. And frequently the term we use depends more on the age of the offender and whether or not he is arrested than on the severity of the antisocial behavior.

Fortunately, since antisocial behavior throws the child into conflict with certain social groups, he seldom gains complete satisfaction from his misbehavior. Still, the reason that he adopts antisocial behavior in the first place is that it comes closer to satisfying his needs than any other behavior that he has discovered. And

once he has indulged in his first antisocial act, he has begun to erect barriers that cut him off from socially acceptable behavior in the future. As a professional teacher, you will be deeply interested in preventing the erection of such barriers, and in removing any that may already exist when the child first comes to you. Guidance toward desirable behavior must occur as early in the child's life as possible.

Each child must have an opportunity to discover socially acceptable solutions to his personal problems. The school cannot assume complete responsibility for achieving this goal. The family and other community agencies must share the task. But since the child spends so much of his time in the school, and since the school's potential influence on him is so great, every teacher must keep this goal constantly in mind. Unfortunately, as we know, the school, as well as the family and the community, often fails to do its part. We have a professional as well as a personal interest in finding out why we fail. Is it enough for the school simply to offer the potentially delinquent child the same opportunities that it offers other children? Should it not offer extra help to the child whose home and community environment is catapulting him toward antisocial behavior?

The delinquent and his environment

Court records tell us that by 1940, over the United States as a whole, 1 per cent of all school-age children became delinquent each year, and that nearly 10 per cent became delinquent before they reached maturity.¹ The actual number of children who commit serious antisocial acts is far higher than these percentages indicate, however, since many offenses are never entered on police or court records. And delinquency certainly has not decreased since 1940. Figure 1, based on data compiled by the Federal Bureau of Investigation, shows arrests by selected age groups from 1938 through

¹ C. C. Bennett, "Problem Children, Delinquency, and Treatment," *Review of Educational Research*, X (1940), pp. 440-449.

ARRESTS - SELECTED AGE GROUPS

1938 - 1948

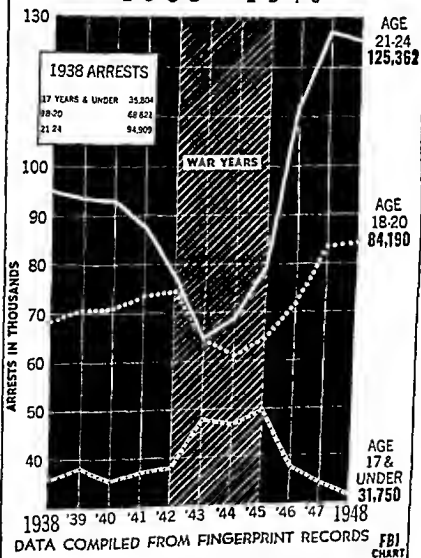


FIG. 1.

1948. Figure 2, based on data for Cook County (Chicago), Illinois,² gives us an indication of the trend since 1948. For evidence of the extent in which the school-age child and adolescent are involved in crime, see Figure 3, prepared by the Federal Bureau of Investigation for 1952.

The extreme behavior problems that you will meet in the classroom—stealing, aggression against property and persons, habitual truancy, and rebellion against authority—differ from delinquency only in legal definition. So we can appropriately begin our study of the psychological basis of behavior problems by looking at some of the environmental conditions that are associated with a high rate of delinquency.

TABLE 1 *Number of families, by family income, for the United States: 1951**

Family Income	Number of Families
Total.....	40,400,000
Under \$1,000.....	3,700,000
\$1,000 to \$1,999.....	4,600,000
\$2,000 to 2,999.....	6,200,000
\$3,000 to \$3,999.....	8,000,000
\$4,000 to \$4,999.....	6,300,000
\$5,000 to \$5,999.....	4,300,000
\$6,000 to \$6,999.....	2,800,000
\$7,000 to \$9,999.....	3,000,000
\$10,000 to \$14,999.....	1,000,000
\$15,000 and over.....	500,000

* From *Current Population Reports, Series P-60, No. 12, Washington, D. C.:* U. S. Department of Commerce, Bureau of the Census, June, 1953, p. 1.

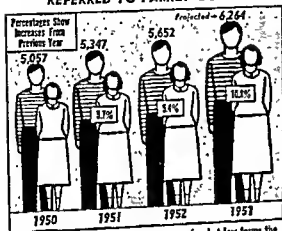
Delinquency flourishes in crowded areas, where families are large and living space is at a premium.³ In any area, rural or urban,

² Tom P. Barrett, "Juvenile Delinquency on Rise in Chicago," *Chicago Sun-Times*, May 3, 1953, p. 47.

³ See Figure 4 for number of children (1948) in low and moderate income families and Table 1 for number of families, by family income, in 1951.

it is closely related to poverty and to broken homes. It thrives in neighborhoods where there is a high rate of adult crime, where there are few playgrounds, and where mothers are obliged to work outside the home.⁴ Many children learn their first lessons in delinquency as they play in the streets and in cellar or alley bangouts, safe from adult supervision.

DELINQUENTS AGE 10 TO 17 REFERRED TO FAMILY COURT



This shows a 22 per cent rise in four years in what law terms the juvenile delinquent age group. Figures are for Cook County.

Delinquency is rising among teen-agers. This is revealed by number of cases referred to courts by the Juvenile Bureau and other units of the Chicago Police Department. (Includes the Chicago Park District Police.)

BOYS VS. GIRLS

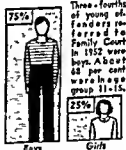


FIG. 2. From Chicago Sun-Times, May 3, 1953, p. 47.

So much for the general features of the environment in which delinquency abounds. We must be careful not to overstate the relationship between physical deficiencies in the environment and delinquency. The fact is that many children from crowded areas have gone on to distinguished adult careers, and that many children from socio-economically favored areas have fallen into delinquency and adult crime. Obviously there must be basic psychological factors that determine whether a child will be strengthened or de-

⁴ Detailed information on the delinquent environment and the delinquent child can be found in many of the selected references at the end of this chapter.



NUMBER OF PERSONS ARRESTED UNDER 25 YEARS OF AGE NUMBER OF ARRESTS PER AGE GROUP MALE AND FEMALE

232 CITIES---TOTAL POPULATION 23,334,305
CALENDAR YEAR 1952

AGES

under 15	33,612
15	13,686
16	18,196
17	20,634
18	21,095
19	21,048
20	19,361
21	25,163
22	26,698
23	27,347
24	30,272

FBI
CHART

FIG. 3.

formed by crowding and poverty. If we can identify these psychological factors, we will have a valuable clue to what the school can do to help children develop in socially acceptable ways in spite of their environmental problems.

The basic causes of antisocial behavior

WE KNOW that antisocial behavior as well as socially approved behavior is learned and we know that the child learns only when

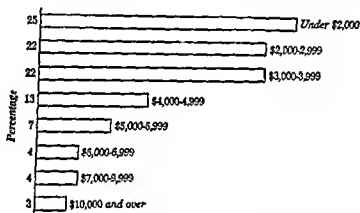


FIG. 4. Percentage of all children in the United States from families of various yearly incomes. Adapted from Chart 22, *Children and Youth at the Midcentury*. Midcentury White House Conference on Children and Youth. Raleigh, N. C.: Health Publications Institute, Inc., 1951.

he encounters problems that stand between him and goals that appeal to his motives. We know that the solutions that the child discovers to his present problems are a major determinant of his behavior when he meets future problems. We should be able to discover, then, either in the motives of children or in the learning process itself, an explanation of antisocial behavior.

Everyone—child and adult, bright and dull, felon and evangelist—has the same basic motives. And everyone finds the same general goals attractive: prestige, praise, love, new experiences,

freedom from want, security for loved ones, and general self-respect, to mention only a few.

Where, then, do the critical differences lie between the forces that result in antisocial behavior and the forces that result in socially approved behavior? There seem to be but two possibilities: (1) differences in the number, size, or kind of problem that children encounter, and (2) differences in the solutions to problems that children discover or are taught.

Everything we have learned about the forces that direct behavior leads us to the conclusion that behavior problems, delinquency, and crime must result from combinations of these two factors. We know that *all behavior is caused*. Both highly approved and antisocial behavior are energized by the needs of the child and *shaped by the problems that he encounters and the solutions that he discovers*. The problem child, both in the school and in society, has important problems for which he has not yet found socially acceptable solutions. He is striving to satisfy the same basic needs that the well-behaved, well-adjusted boys and girls of the same age are striving to satisfy. Each delinquent child has problems that are bigger or more numerous or an environment that has taught him to find antisocial solutions to his problems. His problem behavior is, after all, merely a symptom of his struggle to satisfy his needs. First, then, let us examine some special problems that children find difficult to solve.

Special persisting problems

IN OUR CULTURE, the ordinary, day-to-day problems of life are likely to block satisfaction of the psychological rather than the physiological motives. The special, persisting problems that so often lead to antisocial behavior almost invariably act on the psychological motives. True—hunger, cold, and discomfort can by themselves create tremendous tension. But ordinarily their most potent effect is to destroy the individual's confidence in his ability to control his world and thus to leave him insecure long after he finally becomes well fed and comfortable. Even under the most favorable

conditions, the psychological motives are never completely satisfied. And when a child must meet numerous, persistent threats to his security and esteem that he cannot remove by a direct approach, he is almost certain to develop and maintain a high level of tension.

The habit motives also are important in the development of problem behavior, primarily because they stabilize and maintain modes of attack. The behavior patterns that the individual acquires as he attempts to satisfy his physiological and psychological motives tend to become habitual, persisting long after his original reasons for the behavior have disappeared. We cannot overlook the power of habit motives when we try to modify undesirable behavior in the classroom. Not only must the child discover socially desirable behavior that meets his needs better than the undesirable behavior does, but he must have opportunities to practice the new behavior until it, rather than the undesirable behavior, becomes habitual.

All the motives, then—physiological, psychological, and habit—come into play in the complex development of antisocial behavior. But, as we have found in studying other behavior patterns, the psychological motives seem to have the most potent influence and, fortunately, it is these motives that we can most easily appeal to in the classroom. So we shall concentrate here on the special problems that threaten satisfaction of the psychological motives.

Obviously, children with special problems are not thereby excused from having those other problems that nearly all children must solve. And though problems are a necessary condition for learning, if the child has numerous special problems added, he may find the task of achieving satisfactory personal and social adjustment too great.

Threats to security. Many of the special problems that children meet offer nearly insurmountable blocks to their attainment of security. Since the first signs of antisocial behavior often reveal themselves during early childhood, let's look first at the problems that arise in the home.

Even the home that fails to contribute positively to the child's

security presents him with a serious problem. And the home that actually threatens his security magnifies the problem to frightening proportions. Luckily, most children do receive from their parents a fair measure of the security that they need. But what about the child from a broken home? Whatever the cause of the break-up, this child has a special problem. If friction and recrimination existed between the parents long before the break, the chances are that he has found little security at home. In fact, the threat to his security has probably been greatest before rather than after the actual break. Broken homes are all too common in our culture. In 1948, about 2,000,000 children in the United States under 18 years of age were living with neither parent, and 4,000,000 children were living with but one parent.⁵ A broken home, in itself, does not necessarily launch a child on a delinquent career. But it does present the child with a unique problem.

Then there are homes that never quite break up, but that manage to hold together in an atmosphere of never-ending discord and tension. The children in such homes must face threats to their security that are sometimes more destructive and pernicious than the threat offered by an actual break-up of the home. In some of these homes, children must cope with an atmosphere marked by habitual drunkenness, drug addiction, extreme emotional instability, or physical violence. In other homes the family's energies may be consumed by the serious illness of one of the parents. These problems are so great that the young child cannot be expected to attack them directly. He has no choice but to turn away from the home in his attempt to find security. And socially acceptable sources of security outside the home are not easy for him to find.

The home is not the only place where the child must come to grips with threats to his security. Almost every child spends a good part of his waking hours as a member of a peer group. To many children, membership in the peer group offers a source of security

⁵ *Children and Youth at the Midcentury*, Midcentury White House Conference on Children and Youth. Raleigh, North Carolina: Health Publications Institute, Inc., 1951, Chart Number 13

that is a valuable supplement to the security that they enjoy at home. To others, it offers the only source of security, since the home offers none. But some fail in their attempts to become fully accepted by a peer group. They become outcasts and scapegoats. In their desperate struggle for group recognition, they succeed only in intensifying their insecurity and isolation. To the child from an insecure home, rejection by his peer group may be so painful that delinquent behavior becomes the only path open to some kind of security.

The adult community is usually thought of as a source of additional security and recognition for both children and adolescents. We remember the friendly, encouraging, and sympathetic playground supervisors, Sunday-school teachers, ministers, scout leaders, policemen, merchants, and teachers. But do all children derive security from adults? Or do some boys and girls find the policeman, shopkeepers, and teachers hostile and threatening? We all know of children who have been discriminated against, even though their own actions were relatively blameless. Thoughtless adults are all too prone to base their attitudes toward a child on the reputation of his parents, brothers, or sisters, or on the location and condition of his home. As a result, the very child who is most in need of security is rejected by the adult community. The home conditions that have created his initial insecurity become the basis of threats to his security outside the home.

We could go on with this list of special, persistent threats to the child's security. We might mention membership in a minority group, the threat of eviction, the loss of family income through strikes, illness, or depression, and many, many others. But the number of special problems is almost as great as the number of individual children. The examples listed here are enough to make you aware of the serious difficulties that some of the children you work with will be facing.

Threats to self-esteem and the esteem of others. The problems that threaten the child's security are also likely to lessen his self-esteem and the esteem of others for him. In addition, there are certain problems that directly jeopardize the child's feeling of self-

respect and his status among others. Let's look at some of these problems. Again we shall begin with the home.

The prestige or lack of prestige that the child is accorded at home reflects itself in his own feeling of importance. To a large extent, how he values himself is determined by how other persons appear to value him. The child reads great significance into situations and attitudes that seem unimportant to adults. He is still trying to form a clear image of himself and his place in the world, and he is extremely sensitive to hints and clues from the people around him. He is quick to interpret the meaning behind casual comments and reactions from his parents. If he is one of those unfortunate children who were never wanted by their parents and who have never been welcome in the home, he soon learns to set little value on his own worth. If he is wanted, trusted, and respected, he values himself accordingly. "You are a hard worker." "You are an honest boy." "You are stupid." "You are a liar." These are the attitudes that the child reacts to—even when they are never actually put into words by his elders. "He is John Jones' boy" may be either a compliment or an insult to the child. In either case, he identifies himself with his father's status and gains or loses self-respect accordingly.

The clothing that the child wears and the condition of his home have a tremendously important influence on the child's opinion of himself—particularly during adolescence. Many an adolescent girl has refused a date with a boy she greatly admires simply because she could not bear to have him see her home or the manners and appearance of her parents. Eventually, she might even resort to dance halls and taverns to satisfy her need for companionship.

Within the child's peer group, countless factors influence the respect that his fellows accord him and that he, consequently, accords himself. The moral reputation of his family, his clothing, home, race, nationality, religion—any of these may have a child from acceptance by his peers.

As we might expect, the child's classroom teachers have a great deal to do with how he regards himself and how others regard him. Although evaluation should be based on individual ability,

we know that many teachers find it easier to give the greatest rewards to the student who achieves the best absolute performance. Of course, some problem children are very bright and others are very dull. But the average I.Q. of delinquent children is somewhat below 90. If we fail to give the child of low intelligence a chance to win the respect of his teacher and his peers in the classroom, we are striking one more blow at his self-esteem. We cannot risk adding to a burden that he may already find insupportable. Instead, we must recognize that his low general ability is creating problems of far greater significance than the inability to master subject-matter learning. By concentrating on his abilities rather than on his disabilities, we can help him gain confidence in himself and reduce the chance that he will resort to delinquent behavior in an attempt to build up his self-importance.

Blocks to new experiences. The neighborhoods in which delinquency abounds are crowded and lacking in play space. They are intended for adults rather than for children. The children must somehow fit their play activities into the factory and business areas, or take their chances on the busy streets. The child who lives in a fine residential neighborhood, on the other hand, has opportunities for interesting experiences, both inside and outside the home. He may have his own room, his own radio, a recreation room in which to entertain friends, use of the family car, space for a hobby, access to a swimming pool, and an assured entry to various social activities.

The effect of special problems. We are aware that the special problems that we have been discussing do not by themselves cause delinquency. These special problems result in unfulfilled needs. They create tension. For the most part, the child cannot solve them by a direct frontal attack. He must either find substitute goals or remain in a state of tension. We know that some children find socially acceptable methods of solution in spite of tremendous difficulties. When they do, they may become stronger because of the problems that they have solved.

We may not fully appreciate the tremendous size of certain

special problems as viewed through the eyes of the child. Certainly we must not conclude that all special problems are associated with low social and economic background. An unwanted child, even with every luxury, has a problem that he cannot solve by a direct approach. An older child who loses his security on the birth of a younger child may find no socially acceptable solutions. An unattractive child, a crippled child, a child with less ability than his brothers and sisters, and any child with emotionally unstable parents may have tremendous and persisting problems.

As we can see, a child who has one special problem is likely to have many. Home conditions that block security often are accompanied by community conditions that also block security. Any conditions that block security are likely to be accompanied by threats to self-esteem and the respect of others. And the child with these blocks to security and esteem is likely also to live in a home and community where socially desirable opportunities for stimulating experiences are lacking.

Whenever a child resorts to unacceptable behavior in the classroom, remind yourself that this may be the only way he knows to win the security and esteem that he needs so desperately. His problems may be so far beyond his ability to solve them that he is simply incapable of making a head-on attack. Never, in your impatience, say, "But every problem can be solved in a socially acceptable way. After all, no child is *compelled* to resort to unacceptable behavior." That may be true. But if you, an experienced adult, have difficulty in guiding a child toward acceptable solutions to his problems, remember how much more difficult the task is for him, with his limited experience and his emotional involvement in his predicament.

We have recognized that there are but two possible reasons for the learning of antisocial behavior: (1) differences in the number, size, or kind of problems that children encounter, and (2) differences in the solutions to problems that children discover or are taught. We have seen that some children do encounter persisting problems that they find nearly impossible to solve in a socially approved manner. Now let's examine some of the environmental

forces that appear likely to direct children toward antisocial solutions to their problems.

The learning of antisocial behavior

WE KNOW that when problems are encountered, people search for solutions. Solutions sometimes are discovered by chance but, perhaps as often, modes of attack that seem to have been successful for others are tried. And even antisocial solutions are sometimes directly taught the child by his peers and his elders.

Actually, some of the critical steps that a child makes toward either socially acceptable behavior or antisocial behavior may appear rather small when viewed through the eyes of the adult. Although there are many socially acceptable pathways that are open to most children, a child by chance may adopt an antisocial solution and because of lack of understanding on the part of those adults most important to him, he may be unable to retrace his steps to the accepted path.

Even under rather ideal conditions, nearly all children experiment with antisocial behavior. But under ideal conditions, adults see that the child finds such behavior unprofitable and, when necessary, they help the child to find socially approved behavior that better satisfies his needs.

What about the family, the peer group, and the adults in the life of the child who has encountered many of the special problems that we have discussed—the child from the broken home, the home of low moral standards, and the crowded communities? In these cases, do the parents and other adults strive equally hard to make delinquent behavior non-rewarding and to help the child find socially approved behavior? We do not need to make a detailed analysis of how the family, the peer group, and the adults of the community may each fail to help the child find socially acceptable solutions for his problems or how they may go still further and teach delinquency directly or by example. We can see that the conditions that result in nearly insoluble problems for the child are

likely also to be accompanied by conditions that lead him toward delinquent behavior.

We know that in certain families the older children do teach younger children to lie, to steal, to be truant from school. And frequently sex delinquencies are taught by older to younger siblings. In certain families the parents obviously set a very low standard of moral behavior and they may actually teach their children to steal or encourage them in aggressions against persons and property.

In some neighborhoods, the child is constantly menaced by threats of physical violence. The child who grows up in crowded slums may never experience the security that comes from supervised playgrounds and parent-sponsored recreation. He must fight if he is to survive. And he is surrounded by thousands of other children who are just as intent on survival. The only way he can overcome this persistent threat to security is to join up with a neighborhood gang. He cannot do battle alone. Encouraged by his companions, he discovers that violence and aggression provide satisfactions that overcome his feeling of insecurity. The loyalties, excitement, and prestige that he experiences as a member of a gang serve to make his violent patterns of behavior habitual and self-perpetuating.

In areas that are high in juvenile delinquency, adult crime also is prevalent. In these neighborhoods, the child does not need to search blindly for solutions for his problems. He sees the prostitute in her fur coat, the gangster driving a new car, and the racketeer with money to spend. In the crowded areas the successful adults are the crooks, the gangsters, the kept women, and the prostitutes, and the successful adolescents are the leaders of youthful gangs or the henchmen of leaders of adult gangs. Here the forms of recreation that are available to the adolescent are intended for adults—pool rooms, dance halls, cheap theaters, and saloons. In these places of recreation the adolescent is early initiated into the way of life of the adults of his community.

Contrast this environment with the better residential areas, where delinquency is relatively rare. Here smaller families live in single

What the school can do

OBVIOUSLY neither the individual teacher nor the entire teaching team can transform all the home and community conditions that create special problems for the child. Nor can they protect the child from all the opportunities and examples that may lead him to satisfy his motives through antisocial means. What the school can do is to focus its attention on providing the child with socially acceptable methods for attaining his needs. These methods must be made convenient for the child to follow and must offer him personal satisfactions that are greater than those offered by antisocial behavior. If he has already adopted antisocial methods, the school has a dual task: It must make the antisocial methods ineffective, and it must offer other, equally satisfying means of solving his problems. What contribution can you, the professional teacher, make to this over-all program?

Cooperation with the community. First, you can use to advantage your position as a responsible and respected citizen in the community and as an expert on the needs of youth and how they can be met. Working with other teachers, school administrators, community leaders, and parents, you can bring home to the community as a whole the need for playgrounds, supervised recreation facilities, and a sympathetic understanding of children with special problems. You will not be alone in your attempts. Ministers, scout leaders, service clubs, mental health associations, physicians, judges, police, and even firemen willingly contribute time and money to the task of providing youth with socially acceptable methods of satisfying their motives. You have a major personal responsibility for taking your place on the community team, even though at first your contribution may seem small.

The teaching team. Second, you are a member of a much smaller team that has heavy responsibility for a more limited aspect of the problem. This team is made up of your fellow-teachers and the school administrators. If you teach in a large city, full-time guid-

ance workers, school nurses, and psychologists also will be working with you.

The school's educational objectives and curriculum must be made to fit the needs of all children. This is a big task. It can be accomplished successfully only by the concerted effort of trained experts working together as a team. To accomplish it we must first adjust the regular classroom programs so that every child has opportunities to develop security and self-esteem. We recognize that the low-ability child will have a persisting special problem if we fail to make adequate adjustments in our demands. And we know that we must make these adjustments, for the low-ability child is likely to have still other special problems in his home and community. Next, we must work together in providing special courses and training programs for the child whose abilities or interests do not lead him toward college. And we must offer such programs honestly and enthusiastically.

The child who is not going on to college needs more than mere toleration in the school. He must be recognized as worthy and must be given every opportunity to advance as far toward effective living as his ability allows. Success in typing, home economics, woodworking, automobile mechanics, and vocational agriculture should reward the child with just as much security as success in Latin, geometry, and English grammar. If we have special meetings and societies for children who are planning to enter college, we should do the same for children who are planning to enter immediately upon their life work. If special diplomas are to be awarded to children who have completed the college preparatory program, special diplomas must also be awarded to the future machinist, farmer, and homemaker.

The teaching team must discover all the special problems that children face and then plan ways for allowing each child to find acceptable solutions. All the members of the team must understand clearly that the school exists for the purpose of helping each youth to acquire the knowledge and skills that he needs for successful living. In order to work out the most effective educational pro-

cedures, each teacher must have a profound understanding of children—their abilities, interests, past experiences, and present problems. And this understanding must always be focused on the individual child. Otherwise the teaching team cannot hope to tailor the school program to each child's special needs.

Teamwork means that information about the home problems and community forces that affect the child must be shared by everyone concerned. Since the individual teacher cannot possibly assemble complete information on each child, a central record system must be set up. An efficient system preserves valuable information for the use of future teachers. The child's special problems tend to persist stubbornly year after year, and a rich supply of information on his past experiences helps each teacher along the way to guide him one step further in his progress toward security and self-esteem.

If the school is to make unacceptable behavior unrewarding, all members of the teaching team must cooperate in the attempt. A child must not be penalized for certain types of behavior in one class and rewarded for them in another. One of the causes of his difficulties may be his inability to cope with the inconsistencies of adult authority. Only by displaying a consistent attitude throughout the school can the teaching team hope to induce stability and security in the child's own behavior.

The individual teacher and the child. In most of your direct contact with the child, you will be working by yourself. You will be guided by the thinking of the community and of the teaching team, of course. But the immediate, on-the-spot decisions will be up to you. And that is as it should be. That is the only way in which you can convince each child that you are concerned with him as an individual and that you value him for his individuality.

Your awareness of his individual problems will help you see how he can be encouraged to take his rôle as a full member in the peer group. Moreover, your treatment of the individual child will have a lot to do with how his classmates regard him. If you respond to his insecurity by sheltering and overprotecting him, you simply encourage the other children to thrust him into even deeper iso-

lation. If you accept him on an equal basis with the others, you encourage the group to accept him too.

Once you have convinced the child of your sincerity and respect, you will find that he will want to confide in you—especially if he is struggling with special problems. Be careful to treat his confidences with dignity and discretion. You will gain information that you can get in no other way. The very fact that the child has an adult in whom he can safely confide his problems and his attempts to solve them will do much to increase his security and self-esteem. Be a sympathetic listener, but do not try to take his problems on yourself. You must not deprive him of the experience in problem-solving that he needs.

Since it is through your individual work with the child that his special problems must be identified and much of the treatment must take place, let's examine some specific symptoms of tension that you should learn to recognize.

The symptoms that the child with the special, persistent problem exhibits are not so different from the symptoms that any child exhibits when he is under pressure. But normally the pressure does not persist day after day, nor do the symptoms become more and more acute as time passes. Any child may break into tears when he is faced with a severe loss, a serious disappointment, or a physical injury. But only the very insecure child hovers constantly on the verge of tears and breaks down crying when he is faced with seemingly minor disappointments or lack of recognition. Pressed hard enough, any child may show aggression against other children, against property, or against teachers and other adults. But the child who constantly has a chip on his shoulder, bullies younger children, or destroys property seemingly without cause shows symptoms of insecurity or a strong need for esteem. Be sure to recognize such behavior as a symptom of underlying difficulties and not as evidence of some innate badness within the child.

In your classroom experiences you will meet an endless variety of behavioral symptoms. You will find some children who feel constantly compelled to take things that do not belong to them, even though they have no conceivable need for the things they

take. Other children retreat within themselves, refuse friendly gestures with a snarl, and are consistently sullen and unresponsive. The chances are that they have suffered extremely painful experiences in their relationships with others, and resort to defiance in order to protect themselves from further injury.

Now assume that you have recognized symptoms in a particular child's behavior that you feel confident are serious danger signals. You know that the child is facing problems that are too big for him to handle alone. Day after day, the tensions are mounting. And you know that sooner or later he will no longer be able to resist them. Unless you come to his aid, he will be forced to resort to unacceptable behavior. What, specifically, can you do to help him?

Of course, the answer to that question depends on the actual situation. No one answer will serve for all the individual problems that each child must face. But we do know that a successful way to approach big problems is through paying careful attention to the small, minute-by-minute details that make up the days and the weeks of classroom living. Over-serious, high-flown lectures delivered only when a crisis develops are not the answer. They create an artificial, unfamiliar atmosphere, and serve only to heighten the child's growing sense of insecurity.

If you are sincere in your attempts to help the child meet the special problems that are threatening him, and if you try realistically to sense the emotional tensions that they engender, you will find that every word you address to him, every reaction you show, and every suggestion you make will somehow be right. Your intentions will be reflected in all your personal dealings with him. And your sincerity and your interest will probably do more to strengthen his flagging sense of security and self-esteem than will your actions themselves.

You have probably heard adults testify to the influences that some special teacher had on them during their school days. In a crowded neighborhood in one of our large cities, dozens of men attribute much of their success to a high-school teacher whom they knew many years ago. He opened his home and his workshop

to the boys after school hours, he took them on trips to the country, and, most important of all, he was willing to listen to their troubles and he showed faith in their ability to work out solutions. Some of these men even admit that this teacher's influence probably meant the difference between the life they are now leading and a life of crime. The influence has spread far beyond the immediate schoolroom situation. These men are still reflecting it in their attempts to help less fortunate children to find their way toward happy lives and good citizenship.

In another community, a small country town, an unusually large number of young people have gone on to advanced study in colleges and universities. Many of them mention a particular school teacher with affection and admiration whenever they talk about the reasons for going on with their education. This one teacher may have started a community tradition that will persist long after he has left the school.

You undoubtedly know of many other examples. You may have seen a boisterous, unruly bully grow into a cooperative, responsible child under the guidance of a teacher who did nothing more than challenge him with new opportunities, suggest interesting ways for him to occupy his time, and draw him into active participation in classroom activities. The possibilities are infinite.

There is no magic formula that you can follow in helping children to avoid the pitfalls of unacceptable behavior. You must simply keep alert for danger signals and then do all you can to help the child work out satisfactory solutions to his problems. And the rewards are great. At first, the child may respond to your attempts with derision, animosity, or open defiance. But if you persist, if you give freely of your time and your confidence, the chances are that he will begin to have faith in you—and in himself. Of all the satisfactions that you will enjoy in your career as a professional teacher, probably none will be greater than that of watching a potential delinquent step out, under your guidance, more and more confidently along the road to a well-adjusted adult life.

Problems and projects

1. If possible, nominate committees to visit juvenile court, a child-guidance clinic, and call on local elementary, junior, and senior high-school guidance directors or principals. Prepare questions in advance on behavior problems, causes, and possible remedies.

2. What types of problem behavior are likely to be most disturbing to you as a teacher?

3. Try to recall a child who came from an environment full of special problems but who developed highly satisfactory behavior and life goals. Can you explain why?

4. Try to recall a child from an apparently fine home and community environment who adopted marked antisocial behavior. Can you suggest a reason?

5. Try to recall how a teacher helped you or a class friend to adopt a socially acceptable solution for a serious problem.

Suggested reading

Baker, Harry J., *Introduction to Exceptional Children*. New York: The Macmillan Company, 1953. Chapter 22, "Types of Behavior," pp. 340-363. (Describes and classifies types of problem behavior common to the school and the home. Also discusses delinquency.)

Additional resources

Havighurst, Robert J., and Hilda Taba, *Adolescent Character and Personality*. New York: John Wiley and Sons, Inc., 1949. Chapter 4, "Community Factors in Relation to Character Formation," pp. 27-46; and Chapter 5, "Social Class and School Adjustment in Relation to Character Reputation," pp. 47-61. (Discusses values and reputation in relation to social class.)

Healy, William, and Augusta F. Bronner, "What Makes a Child Delinquent?" *Juvenile Delinquency and the Schools*, 47th Yearbook of the N.S.S.E., Part I (1948), pp. 30-47. (Discusses environmental and personal factors in delinquency.)

McClusky, Howard Y., "How Community Agencies May Help with Problems of Delinquency," *Juvenile Delinquency and the Schools*, 47th Yearbook of the N.S.S.E., Part I (1948), pp. 191-213. (Discusses

what can be done by the community to relieve tension among children.)

Rumney, Jay, and Joseph P. Murphy, *Probation and Social Adjustment*. New Brunswick, New Jersey: Rutgers University Press, 1952. Chapter 3, "People in Trouble," pp. 27-61; and Chapter 4, "Their Social and Economic Background," pp. 62-83. (Contains many short case histories and data concerning the environment of the delinquent and the criminal.)

"Schools Help Prevent Delinquency," *Research Bulletin of the National Educational Association*, XXXI, No. 3 (1953), pp. 99-131. (Deals with causes, incidence, and treatment of delinquency—extensive bibliography.)

Teagarden, Florence M., *Child Psychology for Professional Workers*. New York: Prentice-Hall, Inc., 1946. Chapter 14, "Behavior Difficulties," pp. 454-494. (Reviews numerous studies of delinquency and discusses the environmental factors that are related to delinquency.)

Witmer, Helen L., and Ruth Kotinsky (eds.), *Personality in the Making (The Fact-Finding Report of the Midcentury White House Conference on Children and Youth)*. New York: Harper and Brothers, 1952. Chapter 5, "Income Level and Health of Personality," pp. 104-134, and Chapter 6, "The Effects of Prejudice and Discrimination," pp. 135-158. (Discussion of low income and discrimination as factors in the development of problem behavior.)

The individual child in the classroom

It is a basic premise of educators and psychologists that the child must be studied as a whole. A study of the parts, no matter how thorough, will never give a complete understanding of the underlying life forces. We study the facts and figures, the principles and problems basic to each aspect of human behavior, but finally we must apply this knowledge to the individual child in the classroom.

We have been talking a great deal about the goals toward which children should be guided in their classroom learning experiences. But remember that you too are a learner, and that your study of children must also be directed toward a worth-while goal. Learning about the child's physical, emotional, social, attitudinal, and intellectual development must not be an end in itself. Nor can a knowledge of motivation, learning, individual differences, and the general problems of children be a final professional goal, interesting though these topics may be in themselves. You must have a reason for acquiring this knowledge.

Actually, the reason has been fairly obvious all along. We have constantly been aware of the use that you will make of your knowledge later on. You know that the reason for learning all you can about children is to develop a better understanding of the needs and problems of the individual child in the classroom, and that to understand the individual child you must learn a great deal about how children resemble and differ from one another. But after you have mastered all this information, you must finally focus your attention on how to appraise each child's abili-

ties, experiences, and goals and how to put your knowledge to use in guiding his development.

There is no easy road to understanding the individual child. Although there are certain basic principles upon which we can draw, each child presents a new problem. Each child has needs, experiences, and abilities different from those of any other child. If we are to succeed in our professional task of helping each child to achieve his maximum possible growth, we must first determine where he is—we must become acquainted with him as an individual. Fortunately, special techniques have been developed for just that purpose and we must learn how to use them.

But simply to master the techniques is not enough. Although years of experience in working with children may give a teacher skill in guiding their behavior in the classroom, we still have no guarantee that he actually understands children—either children in general or the individual child. Many teachers, for example, fail to notice any but the most obvious physical or behavioral differences between children. Although psychologists know that withdrawal is a greater threat to the mental health of the child than is a moderate amount of aggression, many teachers fail even to notice the symptoms of withdrawal. Or, even more unfortunate, a teacher may consider the shy, introspective, somewhat isolated child a model of behavior and seek to encourage such behavior in him and in other children. At the same time, teachers are likely to be unduly concerned over the noise and dust generated by behavior that psychologically is much more desirable.

So now let us take all that we have learned about what is average in the different aspects of development, and about the individual variations that arise in any group, and see how we can apply our general knowledge of children to Martha Jones, Sue Smith, and Phil Anderson—to the individual children in the classroom. Specifically, we shall see what special techniques we can use to become acquainted with the individual child, what behavioral clues we can use to detect his problems, what help we can give him in setting realistic life goals, and what guidance we can offer him as he proceeds toward these goals.

Knowing the child

To know the child, we must have available varied, detailed information about his needs, problems, abilities, and present developmental status. This is information that we cannot obtain merely by observing the child in the classroom. We must enlarge our picture by drawing on information about his present and past problems at home, among his age mates, and in his life in the community.

Within the past few years there has been a rapid improvement in techniques for studying children. We are primarily interested here in those techniques that you, the classroom teacher, can use to advantage. There are many other techniques, of course, that require a great deal of special training and that are used only by the clinical psychologist or highly trained guidance worker—occupational interest tests, tests of personality and adjustment, and the so-called projective devices, for example. But you will not be using these special tests until you have received special training in administering and interpreting them. You have a professional responsibility not to undertake tasks that you are not fully competent to perform. Fortunately, however, you can administer group intelligence tests, educational achievement tests, and many diagnostic tests, if you follow carefully the directions that are furnished for them. And these tests open up vast stores of reliable information about the individual child.

In your day-by-day work with the child, you will draw on two general types of information: (1) information that is gathered by the teaching team and that is accumulated over the years in cumulative record folders, and (2) information that you gather yourself by means of tests, by observing the child both inside and outside the classroom, and by observing his environment, including his parents, his peer group, and his community.

The cumulative record. Ordinarily, the cumulative record folder will be in the principal's office or in the guidance director's office. Not only will you use the information that is already there; you

will also furnish new information in order to keep the record up-to-date and functional. At a minimum, this record will tell you the child's past grades and attendance record; it may also contain a few test scores, such as reading level and I.Q. At its best, it will give you a detailed developmental history of the child from his first year of school to the present time. It will give you valuable leads on the special problems that the child has met in the past and how he has met them. It will also include records of conferences with him and with his parents, data from many different kinds of educational tests, and anecdotal reports by his teachers. Let's make a brief examination of how we gather information ourselves, how it is gathered by the teaching team, and how such information helps us to understand the child.

Test information. The specific tests that you may use in any one school are far too numerous for us to examine here. As you know, there are many different intelligence and educational achievement tests, as well as numerous tests of special skills, such as reading and writing. Then there are scales for determining the child's socio-economic status, attitudes, and occupational interests, tests of emotional and social development, and diagnostic tests that indicate specific weaknesses and strengths in the various areas of educational development.¹

Sometimes a whole battery of tests is used for gathering data on the child's educational development. The results are recorded on what is called a "profile," which is simply a handy way of showing the child's weak and strong areas in educational growth and his general standing in relation to other children of his age or grade. If we give the same test battery to the child every year or two, we can use profiles to point up the areas in which he has shown the greatest growth and those in which he has shown the least. A typical profile is shown in Fig. 1.

What does this profile tell us about Jimmy Johnson? For one thing, it tells us that in nearly all areas he is well above the aver-

¹ Nearly 800 tests are described and evaluated by Oscar Krisen Buros in *The Fourth Mental Measurements Yearbook*. Highland Park, New Jersey: The Gryphon Press, 1953.

age child of his grade. And he seems particularly capable in arithmetic computation. But he has made much lower scores in arithmetic reasoning and the lowest score of all in paragraph meaning. These are clues that we may want to pursue. For example,

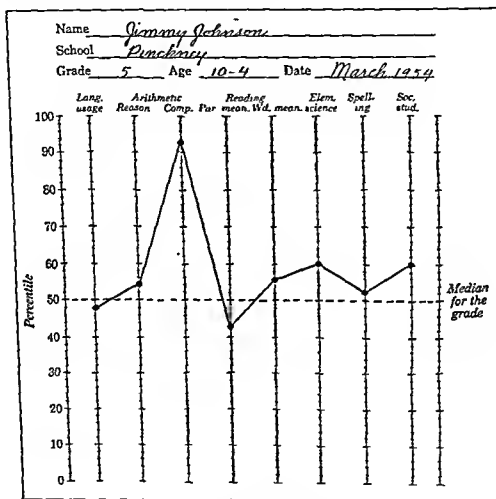


FIG. 1. A typical profile.

they suggest that his reading ability may be weaker than it needs to be. Acting on these clues, we can go about assembling information from other sources that may either confirm or disprove our original conjectures.

Observational techniques. One of the other sources of information on the child's interests, problems, and experiences lies in care-

ful observation of how he conducts himself in a variety of situations. The psychologist has developed observational techniques to a high point of efficiency. In general, he carefully selects the behavior that he wishes to observe and then makes numerous observations of individual children for predetermined lengths of time. Often he uses special forms for recording each child's behavior. He may set up special problem situations so that he can compare the reactions of many different children to the same problem.

You can use the same general approach for studying the child's reactions both inside and outside the classroom, in groups and by himself, in freely chosen activities and in prescribed activities, in the peer group and in schoolroom groups. You can broaden the range of your observation by looking out at the child's community, with its problems and opportunities, and by meeting his parents and siblings in the school and in the home. Through careful observation, you can identify the pressures that are acting on the child and the ways in which he is responding to them.

You will use an informal approach rather than the special check lists and time-sampling techniques that the psychologist uses. But you must never fall into the habit of recording your observations carelessly or without plan. If you and the other teachers who will work with the child in the future are to derive maximum value from your observations, you must learn how to record them in a meaningful fashion and you must plan the situations from which you wish to obtain information.

Ordinarily, you will be interested in clues to the child's problems, his social and emotional growth, and his interests, attitudes, and standards of behavior. Your reports must be objective and specific. They must be written out, because you cannot rely on your memory either for your own use after a period of time or for the use of other teachers.

The more varied the situations in which you observe the child, the more valuable your findings will be. After all, he spends only part of his time in the classroom, and his behavior outside the classroom may suggest to you insights into unexpected aspects of his character. Notice how he behaves in the hallways, on the play-

ground and athletic field, and, if possible, at home. Learn to know the community, and observe children during their informal moments at the motion pictures, on Coke dates, and during scavenger hunts.

Observational techniques have many advantages. They can be adapted for use with children of all ages and they require no equipment. Their primary advantage, however, is in their broad scope. They give you a chance to study the child in many different types of natural conditions. They give you answers to questions such as these: How does he react when his parents are with him? In other classes? With members of the opposite sex? With his peers? With older and younger children? With friends and strangers?

Unless you can record your observations in an orderly fashion, however, they will be of little long-range value. So let's look at one type of record that many schools now use.

The anecdotal record. The anecdotal record is closely related to informal observational techniques. Everything that you observe will not, of course, be important enough to record permanently, since much of your time will be spent in becoming familiar with the community and in discovering how boys and girls of different ages tend to behave in it. In making the anecdotal record, you will want to concentrate on the truly significant incidents that you observe in the child's behavior. If you are careful to record only pertinent incidents, and to record them in unambiguous, precise terms, you will help build up a precious store of information that will increase your own understanding of the child and that will guide other teachers who will be working with the child in the future.

What incidents are pertinent and significant? Ordinarily, those that give us clues to the child's needs and problems, and that reveal behavior that is out of harmony with behavior typical of children of his age and sex. We know that nearly all children show hour-to-hour fluctuations in mood—they are serious, mischievous, sad, or happy. And most children play sometimes by themselves and sometimes with others; they behave in one way when they

are with their peers and in another way when they are with adults. These are normal fluctuations that merely reflect normal problems and interests. But behavior that is out of the ordinary indicates special problems and, perhaps, special experiences. For example, you expect young children to be more or less dependent on adults; but here is a 10-year-old who clings to you and will not leave your side. You expect young children to cry once in a while; but here is a 14-year-old who bursts into tears at the slightest provocation. You expect children to be somewhat careless of their appearance; but here is an adolescent who comes to class every day with uncombed hair and unwashed face. By recording the incidents in which a child reveals unusual behavior of this sort, you gradually build up a detailed picture that suggests underlying causes and that tells you how he responds to various approaches.

The anecdotal record must be objective and specific. It is no place for snap judgments and offhand theories. And an appraisal that occurs to you after you have observed an isolated incident may be proved completely invalid by the incidents that occur in the following weeks and months. Record only what happened, and the social setting in which it happened. Never make an entry like this: "John was insolent today." Such entries merely reflect your emotional reaction at the moment. They say nothing about John or how he responded to a situation. Notice how much more an entry like this one says: "In Monday's arithmetic class John never got started on his seatwork. He twice broke the point on his pencil, asked to leave the room midway in the period, and when he returned near the end of the period he appeared to have been crying. Though ordinarily he plays with a group of boys at recess time, he disappeared and I did not see him again until the children came back to the classroom."

Often you will find that you do not understand just why the incident occurred or just what it means. But by putting together numerous episodes and by adding them to the other data that you have, you can begin to recognize the underlying patterns and then can safely make plans to help the child. Keeping an anecdotal record has only one real purpose: To give us information that will

help us guide the child toward better solutions to his problems.

Health and attendance records. Occasionally, we find valuable information on a particular child in his health and attendance records. Illness of long duration and special physical handicaps often have significant emotional, social, and educational results that persist long after the child has regained his health or has overcome his handicap. During his sickness, he may have been overprotected at home, isolated from his peer group, or incapable of keeping up with his reading. The effects of such hardships often grow greater as time passes. If you can identify the developmental area in which the child is retarded and learn the reasons behind his difficulties, you will be in a much better position to plan experiences that will restore him to the developmental level appropriate to his ability and age.

Health and attendance records provide other important information. If you find that a child suffers from a hearing defect, you can make adjustments in the seating arrangements. If a child has suffered convulsive seizures or fainting spells, you will know what to do if an emergency arises. Even more important, you will know how to avoid the situations that lead to emergencies.

The case study. The case study is a technique for assembling and interpreting all the pertinent facts and observations about a given child. Unfortunately, teachers seldom make complete case studies of the children under their guidance. But this technique is widely used by psychologists and by guidance, social service, and mental health workers. Ordinarily, the case study is made only after a child's behavior has reached such a critical point that he is in danger of being expelled from school or even of being sent to a reformatory or mental hospital. Ideally, of course, treatment should occur much earlier than this if it is to be most effective. If the teaching team has done a good job of accumulating significant information, it is a fairly easy task to put it all together into a case study and to obtain any additional information that may be needed. The case study, accompanied by a plan for treatment, deserves to be used far more than it is. Let's look at the general procedure for preparing a case study

First, we examine the three most important determinants of the child's behavior: (1) his past history, (2) his current environment, and (3) his present abilities, interests, and achievements.

We assemble information on his past history from the cumulative record, from parents, previous teachers, and from other adults who have known him for some time. To understand the child's current environment, we need to know as much as we can about his home—not just who his parents are and how many brothers and sisters he has. We want to find out how the child is regarded by his family, what special problems he faces at home, and what attitudes and standards of behavior he encounters there. We look for special problems that he may be encountering outside the home—in his peer group and in his neighborhood. Since the school itself is an important part of his present environment, we need to discover what his teachers think of him, what problems he meets in the classroom, and what general status he enjoys there. Most of all, we want to find out how the child sees himself, what he is interested in, and what goals he has set for himself.

In assembling information on the child's present abilities, interests, and achievements, we can go directly to the school records. If they are complete, they will tell us all we need to know. If not, we may need to plan a battery of tests, including an individual intelligence test, if possible, and at least a reading test. We may also feel that it is worth while to have a physician check on his physical condition.

After we have obtained all the information we need from these three sources, we try to understand just what it means in terms of the individual child. Then, together with the other members of the school team and perhaps with other interested adults, we work out a plan for aiding the child to achieve his needs in a socially approved fashion.

The case study's most important contribution comes only after all the information has been assembled. Unless the data are carefully interpreted, and unless a workable plan is devised for helping the child, the case study has little or no value. Our goal is not to gather information, but to safeguard the child's welfare. We

may need to make drastic modifications in his school program, we may decide to invite his parents to share in the planning, and almost certainly we shall include the child himself in our planning sessions.

The conference. As time passes, you will find that you are having countless informal conferences with children. Some of the conferences will be short, some long; some in the classroom, others on the street or over a Coke; some with the child by himself, others with his parents or his peers. You will also want to schedule conferences when problems arise, when you need information, or when you merely wish to become better acquainted with the child. Scheduled conferences, too, should be kept as informal as possible.

Conferences, suggested either by you or by the child himself, are valuable for building mutual confidence and understanding. Unless you succeed in winning the child's confidence, you can never hope to make your maximum contribution to his welfare. He must be convinced that you are fair, that you are interested in his welfare, and that you respect him as an individual.

Perhaps the most important type of conference is the one that pops up almost by accident. One child stays behind to talk after the others have left the classroom, or stops you in the hallway or on the street, or even comes to your home after school hours. Conferences of this sort frequently result from the child's strong need to talk to an adult. As you talk with him, you may become aware of an important problem quite different from the one he brings up. You are in an especially good position to be of assistance, since the child has chosen you as the person from whom he is most ready to receive help. You must be especially alert to your opportunities. Otherwise you may overlook them or even repel the child's advances.

Another type of teacher-pupil interview is the printed or mimeographed questionnaire that is used for gathering information on interests, home background, and even emotional or social problems. You can either purchase ready-made questionnaires or devise your own.

Now that we have considered ways in which we can become

acquainted with the child, let's examine some of the problems that may require special help from us. Although we have discussed some of these problems in detail in earlier chapters, we shall see here just what impact they have on the individual child.

Recognizing deviations in development

ANY CHILD who deviates considerably in development or who has special environmental pressures—these tend to go together—is likely to need a special measure of our understanding. We discussed many of the developmental deviations when we traced the physical, emotional, social, attitudinal, and intellectual development of children. And we examined special environmental problems when we studied the child who adopts antisocial behavior.

As we know, children differ from one another in many ways. Different abilities interacting with different problems and different opportunities for solutions to problems create vast individual differences within each group of children. Skill in teaching involves skill in guiding group behavior, but it demands much more than that. It requires a moment-to-moment focus on the individual children within the group with a special knowledge of each child's needs and problems.

Intellectual deviations. Professional teachers must be highly competent in recognizing intellectual deviations. Most teachers have little trouble identifying the child of low ability, but they frequently underestimate the abilities of the gifted child. As he grows older, the gifted child may achieve mental maturity well above that of his teacher—a situation that is uncomfortable for both the teacher and the child. Even if the intellectually gifted child and his teacher are in harmony, the chances are that he is not stimulated to learn at a rate in keeping with his capacity. Too frequently he is rewarded for filling in as errand boy, proctor, or assistant teacher, sometimes at the expense of his social adjustment.

When the gifted child is identified through the use of intelligence tests, his teachers may regard him as a *freak* rather than as a child

In addition to the problems that every child must face, he must learn to accept his physical inadequacies without sacrificing his self-esteem. At home, he is likely to suffer from overprotection; in his peer group, he risks rejection. He has a special need for your understanding. By working in close harmony with him, his parents, and his physician, you can help to set goals and plan experiences that will strengthen his self-reliance and self-esteem.

Emotional deviations. Many of the children you work with will be struggling with problems that they cannot solve. In one way or another, they show signs of the emotional tension that these problems have generated. Experienced teachers learn to interpret these signs almost subconsciously. Actually, they are responding to clues provided by the behavior of the group or the child. High voices, fast, loud talking (or, in some cases, the huzz of whispering), muscular tension, and rapid movements—these are the signs of group tension. For the individual child, the signs are much the same. His tension makes him different from the rest of the group. He is restless, he cannot stick to a task, he may be a nuisance to the group and to the teacher. Or his unsolved problem may so thoroughly occupy his attention that he cannot even think about his assignments or about the other students. He may withdraw from all contacts. Speech defects are still another sign of tension. Most stuttering and stammering results from emotional tension rather than from a physical disability in the speech mechanism.

What, specifically, can you do to help the child who is under severe emotional tension? First, you can be careful not to add to his problems—he already has more than he can handle. Second, you can supply him with opportunities to gain the security that he so desperately needs. You can give him your sympathetic understanding and try to see that he gains full acceptance in the group. From this point on, you must proceed with extreme caution. Take the child with a speech defect for example. Does he need more attention, or has he had too much already? How can you safely help him to develop confidence in himself? How can you get help on this problem? If there is a psychologist or a counseling specialist in your school, you will certainly talk the situation over with him.

And you will want all the information you can get before you do anything that might add to the child's problems. Finally, you can observe the child unobtrusively and take advantage of every opportunity for informal, friendly conferences with him. You may find a way to relieve some of his pressures through finding his special interest or ability. His hobby may become a bridge to freer oral communication.

Social deviations. Deviations seldom travel alone. A deviation in one area of development is almost always accompanied by deviations in other areas. Although the withdrawn child shows symptoms that indicate social deviations, the chances are that his basic problems are emotional in nature. But in every case you must start with the symptoms and then try to work back to the underlying causes. Since the classroom is, after all, a group situation, symptoms of deviations in social development tend to rise to the surface and show themselves in a readily recognizable manner. Consequently, much of your attention will be directed toward the individual child's problems in finding his place in the social group.

One of your most important professional tasks is to help children to join together in a democratically functioning group in which each child is aware of his own worth and feels free to contribute to the solution of group problems. The withdrawn child and the domineering child are the greatest threats to the functioning of such a group. So, in order to safeguard the welfare of both the individual child and the group as a whole, you must make a realistic attempt to help these children overcome the problems that have forced them to deviate from cooperative group behavior.

When you deal with social deviations in the classroom, you will need to be aware of the special nature of the social group that you and the children make up. It differs in many respects from most other social groups. For one thing, each child has his own goals, and naturally enough his first interest is in attaining them. He may also be interested in group goals, but they are of secondary importance to him. If you can lead each child to an awareness that the most effective approach to individual goals is to work toward group goals, you will succeed in reducing social deviations to a minimum

Your own rôle as teacher-leader is also unique. Instead of trying to influence and cajole the group into taking concerted action, you will be working with the individual children, realizing that their particular problems and goals are more important to them than blind allegiance to the group. You will seldom think of the group as an entity in itself, since you will be more concerned, minute by minute, with the individual children who make up the group.

The teacher's responsibility as a counselor

Knowing the individual child and his special problems and abilities is merely a preliminary step in carrying out your professional responsibility to him. Your ultimate contribution centers around the question of what you can do to help him identify desirable goals that are within his reach. And, having identified the goals, you must determine how much guidance you can and should give him in attaining them.

In recent years, working with the individual child has developed into a professional specialty called "child guidance and counseling." Actually, the trend is for all teachers to become more and more competent in using the specialized techniques appropriate in this work. Nearly all school counselors, even those who devote full time to counseling, are former teachers who have found that work with the individual child is particularly rewarding. Their initial interest in working with the individual child has led them to seek more and more training in diagnostic and counseling procedures.

There are three general types of counseling interview: educational, vocational, and personal. They are all closely related and sometimes all three take place concurrently as we discuss problems with the child. But we shall consider them separately here, in order to see what each type has to offer.

Educational counseling. Most of the time, we use indirect methods to guide the child's educational growth. We use assignments, examinations, and day-to-day appraisals of the child's efforts to help him develop desirable study methods, find rewarding ex-

periences, and establish desirable objectives. But sometimes the child may need more than this—he may need special individual help as he seeks to determine his goals and solve his individual educational problems. And that is when educational counseling enters the picture.

Suppose a child has a reading disability. First, we give him a diagnostic reading test to locate his specific weaknesses. Then, if he is reasonably mature, we suggest certain procedures that will help him to overcome his disability. At the high-school or college level, educational counseling helps us to work with the many students of adequate ability who do not know how or when to study. An informal conference on effective study habits often helps them to see their problem and to correct it. For example, a high-school sophomore may need to work out a realistic study schedule or to identify specific vocabulary terms that interfere with his understanding of chemistry. A college freshman may need help in mastering efficient methods of taking notes, or preparing for examinations, or recognizing the type of reading approach that a particular subject requires.

Sometimes it is more valuable for the child to work through to his own solutions during a counseling session. If you are skillful enough, you can lead him to evaluate his own progress in a particular course, or to decide for himself what he wants to accomplish in a given study program.

Since parents have a direct influence on how a child approaches his educational problems, you will often want to invite them to participate in educational conferences. Suppose the school feels that a child with a certain handicap needs the help offered in a special class or a special school. If the situation is explained to the child's parents in a straightforward, informal conference, they will realize that the school is offering a special opportunity and that it is not penalizing the child for his handicap. In a conference of this sort, the principal or the guidance director will assume major responsibility, but you must be prepared to participate and to explain why you feel that the child is in need of special assistance.

Vocational counseling. The forces that ultimately lead a child to

his choice of a life career begin to operate during the early years of childhood. The guidance that you provide will have a strong influence on whether or not the child makes a wise choice. If he aspires to a level beyond his abilities, he is bound to suffer tensions before he finally makes a realistic adjustment of his goal. If he aims too low, he may find his life work uninteresting and unrewarding. If he has no vocational aim at all, he is likely to achieve far less than he is capable of achieving. And if he chooses a vocation solely on the basis of glamour, prestige, or financial reward, he may be disappointed and unhappy in his life work.

How can you help the child to make a wise vocational choice? Primarily by seeing to it that he has access to all the information he needs on his own abilities and on the qualifications required by various vocations. A special vocational counselor can give him tests that will help him discover the occupations for which his interests and abilities best qualify him. But lacking a special counselor, the teaching team must cooperate in providing him with the necessary information.

You can contribute to this task in the regular instructional program. Children are studying the work done by the engineer, doctor, lawyer, teacher, postman, factory worker, and farmer when they study geography, citizenship, and other social studies. And you are helping the child to prepare for his adult occupation when you teach him to develop good work habits, to pay attention to the task at hand, and to appreciate the need, dignity, and rewards of work.

Beyond this general guidance, you can make available to the child specific information on the vocations that seem to catch his interest. Not that you should try to influence his final choice by emphasizing your own predispositions and interests. Instead, you must see to it that he has a chance to learn what training various occupations require, what specific kinds of work are done in various occupations, and what rewards these occupations give. Boys sometimes set their hearts on becoming a civil engineer because of a romantic notion that an engineer is someone who receives acclaim and prestige for somehow dreaming up beautiful bridges and

monumental dams. They fail to see the mathematical proficiency that is required, the thousands of hours of training, and the months spent bending over a drawing board.

You have many resources for helping the child to get the vocational information that he needs. A visit to a university or high-school occupational counseling center will give you an idea of the many publications that describe various vocations. Once you discover that a child is interested in a specific occupation, encourage him to talk to adults who are actively following that occupation. If you find that several children are interested in the same vocational area, suggest that they appoint a committee to interview qualified specialists in that area. You can help plan career days, when representatives of different vocations are invited to the school to meet with interested students. If there is a college in the vicinity, suggest that it send a counselor to talk to high-school students about the different occupations for which the college offers training. Another possibility is to build a class project around the problem of making a wise vocational choice. Each child makes a tentative choice and then gathers information that he presents to the other class members.

Personal counseling. In a sense, all counseling is personal counseling. But the term is used to refer specifically to the guidance you offer children in facing their day-to-day problems as members of a social group. Although personal counseling has become a highly specialized profession, you cannot pass all the responsibility along to the experts. Because of your intimate relationship with individual children in the classroom, much of the responsibility for providing wise counsel must be yours.

A child with a serious personality problem, of course, needs the help of a trained psychologist. But if no psychologist is available, you must do your best to make available to the child the benefits of your wide experience and great knowledge. Even problems that at first glance seemed extremely grave and pressing have been known to respond to sympathetic understanding from a classroom teacher. But never presume to treat problems that are beyond your training and experience. In an emergency, however, you may be able to give

a disturbed child temporary assistance and even help to prepare him for professional treatment as soon as it can be made available.

Certain general procedures that psychologists follow in personal counseling may serve to guide you in approaching problems that demand your help. Try to avoid suggesting a solution to the child's problem, even though the solution seems evident to you. Listen carefully to what the child has to say before you decide that you know exactly what his problem is. And even after you are sure that you have identified the problem and know the proper solution to it, continue to move cautiously. The fact that you have worked things out is relatively unimportant. What is important is that the child himself comes to a clear understanding of the situation, and, after exploring all the possibilities, discovers the best solution for himself. By asking careful questions, you can help the child to realize that certain solutions will only lead him to bigger problems later on. You can open up to him courses of action that he may not have thought of by himself—ways of earning extra money, for example, or of developing certain social skills, or of regaining the respect of his peers, or of overcoming handicaps that have isolated him from the group. But never forget that the final decision must be made by the child himself. If you usurp his right to make decisions, you will make it increasingly difficult for him to work out solutions to future problems.

Obviously you cannot learn all you need to know about counseling in a few hours, or even a few weeks, of study. All we can do here is to identify some of your responsibilities and point out some of the professional tasks that you must prepare to undertake. The competence that you develop in counseling children and adolescents must come largely from your experience and aptitude in working with them. But be sure that your experience does lead to increased competence, and does not degenerate into a series of mechanical, uninspired "little talks." If you are to see how one child differs from another, and if you are to help each child solve his individual problems, you must be constantly on the alert—you cannot become a passive spectator.

expert are many. He is qualified to handle cases of maladjustment that are outside your training or experience. He is skilled in planning and administering tests, and is competent to administer and interpret individual intelligence tests and personality tests that require special training. Moreover, he has the time to spend on individual problems. He is free of the minute-by-minute details of classroom routine and is able to concentrate on difficult situations that you could not possibly spare the time for.

But what if you find yourself in a small school that does not have a full-time specialist? One thing you can do is to seek special training in counseling so that you can enrich your professional activities with skills in using guidance techniques. Perhaps other members of the teaching team will also have special training. By sharing the responsibilities, you can succeed in doing a creditable job of providing special guidance for the children. In some areas, several small schools have joined together to employ a trained specialist whom none of them could have afforded by themselves.

Specialized training in guidance and counseling, then, is valuable in the school's attempts to help children reach their goals. But even more valuable are the interest, the sympathy, the responsiveness, and the understanding that you show for the individual child. The school, after all, is more concerned with preventing maladjustment than with curing it. And your behavior in the classroom—the way you regard each child when he is working along smoothly as well as the way you respond to him when he runs head-on into problems—has a direct influence on his ability to work out long-range attitudes and habits that will give stability to his life long after he has left the classroom. Guidance must start before problems arise. If you can assure the child opportunities to fulfill his needs for security, recognition, and new experiences, you will be providing him with the most valuable guidance that the school can offer.

Conclusions

THE CHILD cannot speak in the technical language of educational psychology. He cannot say, "My parents have rejected me. I am

isolated from my peer group. My psychological motives are not being satisfied." But he does have a language in which he can express all these attitudes far more eloquently: the language of action. Since we cannot expect him to learn our language, we must learn to understand his. The language of action is a subtle one that no two children speak in just the same way. Each has his own accents and inflections. Only by listening carefully can we understand what each child is trying to say.

By withdrawing from his fellows, one child may be making an implicit appeal for help. By attacking a project with spirit and energy, another child may be saying in effect, "This is what seems important to me. This is worth doing." If the individual child's life in the classroom is to be a true learning experience, we must be alert to his attempts to communicate with us. And we, in turn, must respond in a language that he can understand.

Problems and projects

1. Observe a group of children at a soda fountain, at a movie, or playing a game. Try to identify the most aggressive child, the most withdrawn, the strongest leader, the best-liked, the most nervous, and the most intelligent. What specific behaviors did you use in making your decisions?

2. Construct three anecdotal sketches of children whom you observe in a classroom or at play.

3. Outline the steps you would follow and the specific information you would want in studying the child who has stolen something or who refuses to go to school.

Suggested reading

Lefever, D. Welty, Archie M. Turrell, and Henry E. Weltzel, *Principles and Techniques of Guidance*. New York: The Ronald Press Company, 1950. Chapter 12, "The Place and Value of Records," pp. 312-346. (Discusses the kinds of records that are needed and how to keep and interpret records.) Chapter 13, "Individual Counseling," pp. 347-390. (Discusses the counseling interview and includes numerous short case descriptions.) Chapter 14, "Techniques for Studying the Indi-

vidual," pp. 391-450. (Excellent discussion of the many techniques that may be used to study the child.)

Additional resources

Cronbach, Lee J., *Essentials of Psychological Testing*. New York: Harper and Brothers, 1949. Chapter 16, "The Use of Test Results in Counseling," pp. 356-367. (An excellent overview of counseling procedures.)

Helping Teachers Understand Children. Washington, D. C.: American Council on Education, 1945. Chapter 1, "What It Means To Understand a Child," pp. 1-20; and Chapter 2, "Learning To Describe Behavior," pp. 21-41. (Extremely valuable discussion of what items of behavior are significant.)

Hymes, James L., *Understanding Your Child*. New York: Prentice-Hall, Inc., 1952. (A tremendously interesting and informative book. Every teacher—and every parent—should read it.)

Torgerson, Theodore L., *Studying Children*. New York: The Dryden Press, 1947. (Contains many specific suggestions for obtaining information concerning the child. Suggests record forms and behavior to observe.)

Traxler, Arthur E., *et al.*, *Introduction to Testing and the Use of Test Results in Public Schools*. New York: Harper and Brothers, 1953. (Discusses the use and selection of tests and the interpretation of test results.)

*The mental health of
the teacher*

If we are to guide children toward emotional health, we must insure that the environment is conducive to good emotional adjustment. Since the teacher is an important part of this environment, the mental health of the teacher is of concern to all. Thus, for the teacher mental health becomes an important professional as well as an important personal goal.

So far, we have been talking only about the child—the problems he faces, the solutions he works out, and the progress he makes. And that is as it should be. The modern school is a child-centered school, and your first responsibility is to insure the child's healthful progress toward socially acceptable goals. But what about the problems that you, the teacher, must face? If you are to guarantee a wholesome classroom atmosphere, you must give thought to your own mental health and well-being. If you are unable to overcome your own problems, you can hardly hope to guide children toward happy, well-adjusted lives.

Then, too, you have an immediate, personal interest in leading a rewarding life. No matter how sincerely dedicated you are to your career as a teacher, you must continue to function as an adult member of the community in which you make your home. You will have to adjust to the situations that all adults in the community experience, plus certain other situations that are peculiar to your position as a public-school teacher. So, for both professional and

personal reasons, you will be interested in maintaining a high level of mental and emotional adjustment. In the classroom, your personality has an impact on every child, in every area of his development. It affects his feeling of security and self-esteem, his attitudes and standards of behavior. If you are unhappy, dissatisfied, or insecure, you will create an atmosphere of insecurity among the children who depend on you for leadership. With the lengthening of the school day and the school year in recent decades, and the extension of education toward both the infant and the adult levels, the teacher's influence in the classroom has become more and more important.

Think of the effect that one maladjusted elementary-school teacher can have on the school community, for example. Each school year, about 25 children are under his direct influence for a total of about 1,000 hours for each child, or 25,000 child-hours. Over a period of years, the cumulative effect of his influence can be tremendous.

But your influence need not be harmful. You can use those same hours to exert a beneficial influence on the children you work with. True, teaching presents certain problems that other professional workers do not encounter. If you enjoy working with people, however, and if you sincerely believe in the importance of teaching, you will find that your chosen profession offers you opportunities for a rich, rewarding life that you could find in no other career.

The big question, then, is this: How can you succeed in your living as well as in your teaching? And that question leads us directly to two others:

1. What personal problems are peculiar to teaching? What professional problems? And as a corollary of these questions, what personal and professional goals can you set for yourself?

2. What are the personal rewards of teaching? Will these rewards give you an adequate measure of the security, recognition, and new experiences that you need?

Let's try to analyze the job of the teacher to see if we can determine his special problems and special rewards.

Your special problems as a teacher

ADULTS as well as children want security, self-esteem, the esteem of others, and an interesting life. And marriage and a family, luxuries, rest, and relaxation are as important to teachers as they are to an adult in any other occupation. Community forces that compel the teacher to adopt an unsatisfying pattern of life lead inevitably to tension and unhappiness.

Most of your personal problems will center around one of four general areas: (1) Leading a normal adult community life. (2) Working in a cooperative and friendly manner with fellow teachers and administrators. (3) Working with children both inside and outside the classroom. (4) Creating and maintaining a normal family life. You will find, too, that special professional problems and goals are closely interwoven with these personal matters. Since you have professional as well as personal responsibilities, you will want to improve your skill constantly and to advance in your profession.

Let's look at each of these areas and see what you as an individual can do to meet the problems that will be arising in the years ahead.

Leading a normal community life. Naturally enough, you will want to become a fully accepted adult member of the community in which you live. But acceptance by the community is not always as easy for teachers to win as it is for other adults. For one thing, many adults find it difficult to accept teachers as persons because of their experiences with them in the past. They remember only that teachers have been dominating and superior persons to be feared and respected. Even after he has become an adult, the former student finds it difficult to think of a teacher as an equal in age, interests, and general knowledge. So you may have a harder time winning community acceptance than the barber or the engineer does. The danger is that you may be tempted to retreat from the community and to form social ties only with other teachers.

The male teacher has certain advantages here. By marrying into the community or by bringing his family to live with him, he can join in the social life offered by the church, country club, bridge groups, and other community organizations. But the unmarried woman teacher has more trouble forming community ties. By the time she has completed her college training, she is probably 21 years old. Most of the men of her age group in the average small community are either married or have already chosen their marriage partner. Still she would like to choose a man with an education comparable to her own, of her own age or somewhat older, and with no current emotional ties. Unfortunately, all or nearly all the men in the community are eliminated by these qualifications. Or the unmarried woman teacher may already have made at least a tentative choice of a mate. The chances are that he is attempting to establish himself in a business or profession in another community, or perhaps he is continuing his education.

These are problems that you will have to meet and solve. If you are to perform at top efficiency, you must feel that people in the community value you as an individual and respect your professional ability. Both men and women need to be accepted by members of their own sex and by the community as a whole. Yet you cannot win status and develop close, rewarding friendships until you have lived in the community long enough for people to get to know you and to appreciate your worth. Full acceptance grows from satisfying relationships and mutual confidence, both of which require time and effort.

But how can you be sure that the time and effort you spend will lead to full community membership? There is no way to be absolutely sure, of course, but experienced teachers have offered some suggestions that will help you.

1. *Adjust to community life.* Avoid behavior that conflicts directly with community standards. Even within the same state, one community may prize certain standards, ideals, beliefs, and behavior patterns that are quite different from those considered desirable by another. If you are to win acceptance for yourself, you must first demonstrate your own acceptance of what your fellow citizens hold

valuable. Conformity need not mean that you must abandon your individuality. It does mean that you must treat accepted behavior patterns with respect and courtesy. You can exert leadership in community life and draw on the strength of community support only if you first prove your good faith to your fellow citizens. Behavior that conforms to community standards is a matter of courtesy as well as a professional obligation. And courtesy will go a long way toward assuring your acceptance into full membership in the adult community.

2. *Join organized community groups.* When you move to the community in which you are to teach, your first acquaintances will probably be limited to fellow teachers. As time goes on, however, you must extend your circle of friends to include people who have other interests. Otherwise, they will feel that you really prefer to spend all your time with professional associates. Before you realize it, you may find yourself unable to escape from your little circle, and, even more unfortunate, your interests may become so narrow that you no longer desire to become an active member of the community. To avoid this danger, make a point of joining with people your own age in activities that the community values. Take part in the church choir, in preparing church programs, or in other committee work. Show a willingness to take on any reasonable group responsibility, from organizing a program to washing dishes.

The groups open to you will, of course, vary from community to community. Male teachers often find that membership in one of the service clubs gives them a chance to become acquainted with men who are interested in making the community a going concern. Women teachers who join the Business and Professional Women or the League of Women Voters enjoy opportunities to meet other women who are interested in community affairs and welfare.

Another community enterprise that will be open to you is adult education—not as a teacher but as a student! By the end of the school day, you may feel that you have had enough of classroom routine. But try your hand at ceramics, silversmithing, wood-working, typing, business law, bridge, or music. You may find the experience more refreshing and rewarding than you expect. And

adult education classes give you a chance to cooperate with people in an atmosphere that is conducive to building new friendships.

3. *Give time to community welfare.* Simply joining community groups, however, is not enough. You must be willing to give generously of your time and your ability. The lawyer's responsibility to the community does not cease when he locks his office door at the end of the day. Nor does your responsibility cease when you walk out of the school building. You can become an accepted member of your adopted community only if you are willing to share responsibility for its welfare.

4. *Don't talk shop.* Few occupational groups are more prone than teachers to indulge in "talking shop." And shop talk is the surest route to social quarantine. It leads to a constant narrowing of your own interests and viewpoints. If you are to be an interesting companion for your acquaintances in the community, you will have to show them that you are interested in things other than I.Q.'s, projective techniques, and developmental patterns.

5. *Cooperate, don't dominate.* Since many adults have learned in childhood to feel insecure in the presence of teachers, you must be especially careful not to threaten their security and self-esteem in your social contacts with them.

Many teachers, particularly those who have taught for several years, find that the very leadership qualities that make for good teaching work against their getting along well with members of the community. They feel compelled to lead and direct any activity in which they participate. Be constantly on your guard against seeming to dominate group activities. Even though you follow the same democratic procedures that you follow in the classroom, your behavior may be interpreted by your co-workers as a threat to their security and self-esteem—an attitude that is hardly conducive to a climate of friendliness.

Working with fellow-teachers. Teaching is a cooperative job in which we share responsibilities with other teachers and with supervisors. Even in the elementary school, we must integrate this year's plans with what the child did last year and what he will be doing next year. Teachers and administrators need to plan together, work

together, and share information if they are to make their maximum contribution to the child's welfare. Fortunately, this kind of cooperation leads to many pleasant social moments—at lunch and during informal meetings. To be happy in work as highly cooperative as teaching, you must like and respect your fellow workers and you must in turn be respected and liked by them. As in any occupation, you must be on guard against certain pitfalls. Here are some of the most common ones:

Don't be too concerned over the fine lines of distinction between your authority and that of a fellow teacher, or between your authority and that of a supervisor or a parent. Accept the fact that your English class or your science class will be disrupted from time to time by plays, debates, and athletics. Don't become upset when a special art or music teacher forgets that he is to have "your" children for only fifteen minutes. Remember that your major interest is to promote the child's total growth.

Do your part to keep the teaching team operating as a whole. Don't join special in-groups. Do all you can to welcome new teachers as respected, trusted colleagues.

Don't feel that suggestions made by supervisors or other teachers are personal threats. By accepting constructive criticism, you may be able to gain a friend as well as to improve your professional performance.

Win your advancements because you have earned them. Call forth the enthusiastic endorsement of your fellow teachers, not their grumbling resentment. Remember that the best way to prove that you know your business is to show appreciation of the contributions of others. When you underrate your co-workers, you simply reveal your own deficiencies.

Don't convince yourself that your own specialty is so important that it should receive more and more of the child's time at the expense of other areas. Don't demand the newest equipment, the best classroom, and the most brilliant students. Be willing to do more than your share of the *unglamorous jobs*.

Above all, don't hesitate to *ask* for advice or assistance. Don't become a burden to others, but *give them* a chance to help you

when you need help. You will gain their esteem as well as their advice.

Effective teaching cannot be carried on behind closed classroom doors. You must respect the judgment of others on the subject matter that you are to teach and the procedures that you are to use. Your administrator has a responsibility for building the smooth and efficient team action that leads to an integrated curriculum. He has a right to expect team action from a staff of professional teachers. Many problems of subject-matter content, teaching method, and discipline will remain your responsibility, of course. But the members of the teaching team must attain a high degree of integration and cooperation if they are to avoid overlapping and spotty coverage.

As you can see, doing a skillful job of teaching the children for whom you are directly responsible is not enough. You must also share in the responsibilities of the team. You must make the same concessions and assume the same responsibilities that you did when you sought full acceptance by your fellow students, by the members of a sorority or a fraternity, or by a church group. Socially skillful adults make concessions and assume responsibilities every day of their community life.

Working with children. When you go out as a beginning teacher, fresh from the college campus, you will need to make some immediate adjustments in your viewpoint. The teacher's attitudes are necessarily different from the student's attitudes. As a teacher, you will be responsible for guiding the behavior of others and for displaying leadership. Your behavior must take on a new consistency and a new steadiness.

Whenever you are among students, you will be under their close scrutiny. You must control your reactions to situations that as a student you may have enjoyed freely and openly. In the classroom, students will take their cues from your behavior. If you do not approach important work seriously and with purpose, neither will they. You will see your own attitudes, habits of attention, regard for others, courtesy, and conduct reflected directly in their behavior.

You have probably noticed how a group of students may be noisy,

rude, and inattentive with one teacher and quiet, courteous, and attentive an hour later with another. How can you enlist the students' attention and interest? Much depends on your getting a good start. You do more to set the atmosphere in the first class meeting than you will be able to do at any later date. Once you have finished your college courses in history, English, and science, you should know more than enough about these subjects to teach classes in them successfully. Your big problem will be to create an atmosphere in which effective learning takes place.

Not that you should lose your sense of humor or your liking for boys and girls. These very traits are most important to your success. But remember that it is much easier to change a reserved, serious, businesslike classroom atmosphere into a more human, friendly, and cooperative situation than it is to change it in the other direction. You will certainly need to become well acquainted with individual boys and girls before you can acquire their complete confidence. But you cannot become a working leader in the class by acting as if you were a fellow student. Both children and parents will tend to judge your worth by the value that you set on yourself.

It is important to your mental health as well as to your professional success for you to gain the confidence, respect, and cooperation of students. Their esteem for you will satisfy one of the strongest of your psychological motives. Year after year, thousands of teachers find their greatest satisfaction in the affection and esteem shown them by the students they work with in the classroom. Moreover, the attitudes that adults in the community show toward you will be determined in large part by the attitudes their children show. By creating an effective learning situation, you will be satisfying many of your own psychological needs, as well as the psychological needs of your students.

Your own attitude toward the problems that arise from day to day is an important element in building an effective learning situation. A calm, well-integrated approach on your part encourages calm, well-integrated behavior on the part of the pupil. If you are dominating, demanding, and excitable, you will have insecure, ineffectual pupils.

Maintaining a normal family life. There is considerable evidence that most married persons, both male and female, are better adjusted than are single persons. One reason may be that well-adjusted persons tend to marry and poorly adjusted persons tend to remain single. Certainly marriage seems to be the only satisfactory solution for the sex drives, and it is an important factor in winning full acceptance by the community.

For the professional teacher, this problem of normal family life is especially important. True, many unmarried teachers are well adjusted and succeed in satisfying their life needs through their work with others. But ordinarily the teacher who, through choice, or because of family problems, lack of social adjustment, or community pressures, remains unmarried is a poor emotional risk.

During World War II, the policy of hiring only unmarried women teachers became, from necessity, obsolete. Since many young, unmarried women left teaching to enter industry and the armed services, more and more married women had to be hired. When conditions returned to normal after the war, there was no general return to the policy of requiring that women teachers remain single.

Of course, marriage creates special problems for the woman teacher. If she tries to be a teacher, homemaker, and mother all at the same time, at least one of her rôles is bound to suffer, and she may become inadequate in all three. The tensions that arise as she strives to carry out all her responsibilities may in time threaten her mental health. Her experiences with her own children may make her teaching richer and more effective, but her children may suffer insecurity because of her absence from home. When she is at home with them, she may be overtired and less effective as a parent. Then, too, a teacher-mother cannot be expected to give her best to teaching when she has left her own child at home ill. If she stays home with him, it means that the school administrator must fill her place with a substitute. As a result, the progress and security of the children in the classroom are threatened.

Improving teaching as a profession. Because the cost of your salary ordinarily is paid directly by the taxpayer of the community but your work does not result in easily seen and quickly counted

returns, it is difficult for taxpayers to realize that *there are differences in the quality of work done and the results accomplished by the inexpert or inexperienced teacher and the expert and experienced teacher.*

One way to raise the status of the teaching profession is to educate the public to recognize the professional nature of the work that the teacher does. *The main goal of your professional organizations is not so much to demand appropriate status and salary for teachers as to improve standards within the profession and to make citizens aware that competent teaching should be properly rewarded. You can work most effectively toward this goal by joining your efforts with those of cooperative teacher organizations.*

Fifty years ago, when the small community was a relatively independent economic and social unit, the status of each person was determined by his personal competence, education, cooperativeness, and general willingness to contribute to the common welfare. In such a community, the teacher's status was relatively high. However, developments in transportation and communication have broken down the small, cohesive community units. As a result, a new criterion—salary—has been adopted for ascribing status to the individual. In our society, salary has become an almost universal yardstick for determining the individual's prestige, both in his own eyes and in the eyes of others. It has become, more and more, the criterion by which personal worth is measured. Perhaps this tendency is inevitable, since as persons move from small groups to large groups they find it more difficult to make direct appraisals of one another and cast about for some more objective measure.

Adolescents choose a profession partly on the basis of how much status they feel it will bring them. If teaching is to attract the superior adolescent—and it must—we must insure that it has high prestige in the community at large. Adequate salaries are not paid simply because an individual or a group wants them, or needs them, or feels abused without them. They are paid *only* if the purchaser feels that the service offered is worth the price. He must be convinced that the service is worth while.

What does all this mean to us as teachers? *It means first that we*

must obtain maximum professional training and make full-time, high-level professional contributions to the community. It also means sharing intimately in community life so that our fellow citizens can recognize the value of our contributions. In short, we must provide a high-quality professional service that we can sell to the community at a fair price. In addition to financial rewards, we shall enjoy the increased esteem of others, increased self-esteem, and the assurance that the best young people are being attracted to the teaching profession.

What administrators expect of teachers. Your supervisor or administrator will look at problems from an entirely different viewpoint from yours. He is responsible for integrating the efforts of all the teachers into a unified program. He is less interested in the performances of individual teaching stars than he is in creating a well-balanced, cooperative, working team. He will be concerned with how much you contribute toward the formation of student attitudes and behavior both inside and outside the classroom, how well and how willingly you work with other teachers in both the curricular and extracurricular responsibilities, and how thoroughly grounded you are in specific teaching materials and methods. He will be interested also in your professional leadership in curriculum development, your attendance at in-service training programs, continued educational growth as evidenced by attendance at summer schools and educational conferences, your acceptance by the community, and your loyalty to the school.

Improving your teaching ability. As we have seen, the difference between the professional teacher and the person who merely knows subject matter is that the professional teacher also knows children, has acquired teaching and diagnostic skills, and has learned the goals of the school. Any intelligent college graduate is well acquainted with the content of subjects taught in high school, but that knowledge does not make him a professional teacher. That is why most states require evidence of your professional skill as well as your command over subject matter.

But professional skill is more than just a credential that you submit when you apply for your first job. Your ability to create effective

tive learning situations should grow with every day you spend in the classroom. And you can supplement your classroom experience with regular reading of professional magazines, active membership in local, state, and national teachers' associations, frequent attendance at summer sessions or extension classes, and careful evaluation of your own teaching efforts. Another avenue to improved teaching ability is through discussions with your supervisor on the strengths and weaknesses of your methods, plans, and student relationships. Moreover, your supervisor can help you with ideas on available materials, interpretation of tests, and the location of professional resources.

If you are alert to every opportunity, you will discover countless ways to grow in professional competence. No matter what methods you choose, you will find that professional growth invariably heightens your sense of security and self-esteem.

Accepting professional responsibilities. It might seem that the job of guiding boys and girls in all the broad phases of their development, both personal and scholastic, would be a full-time job. But you have still other professional duties. Since teaching is a cooperative venture, you will be working with other teachers on the development of an integrated curriculum, on the maintenance of cumulative records of students' abilities and problems, and on plans for extracurricular activities, trips, and school projects.

As a professional teacher, you will identify yourself closely with the profession of teaching. Your esteem in the eyes of others and your self-esteem are strongly influenced by the value you place on yourself as a trained and competent specialist. You can give evidence of your dedication to teaching by cooperating with other teachers in local, state, and national organizations that work for professional improvement and by accepting responsibility for the operation and success of such organizations. You can lend active support to any group that is sincerely concerned with improving the quality of teaching. You may also have opportunities to develop better pre-service and in-service training programs and better systems for identifying and recruiting young persons who will contribute to the prestige of the profession.

Be alert for opportunities to improve the physical situation in which children learn. You have a legitimate professional concern in pleasant and safe school buildings, clean and attractive classrooms, comfortable and well-equipped working facilities, ample supplies and equipment, and adequate libraries.

Do all you can to keep the curriculum of your school alive and up-to-date. Work together with other teachers to revise, strengthen, and integrate the offerings of your school.

One of your greatest professional responsibilities, of course, is to cooperate with your supervisors and administrators. Many of the ideas that lead to the growth and improvement of the school system must originate with you and your fellow teachers.

When you go out into the community, you carry your professional responsibilities with you, whether you realize it or not. If you are careless in your talk, or inaccurate in your accounts of what the school is doing, you jeopardize the welfare of your colleagues and impair the effectiveness of the total school program. But if you can enter wholeheartedly into the richness of community life, you strengthen the position of yourself and your colleagues. When you are talking about the school with members of the community, remember that your words take on special significance. For the moment at least, you *are* the school. An idle remark or an unimportant complaint may be quoted and misquoted until finally it causes serious damage to the school, the administrator, and most of all to you. You will seldom regret what you did not say; you may frequently regret what you did say.

You have heard a lot of talk in recent years about the teacher's responsibility for preserving academic freedom. Judging from many of the debates, academic freedom is regarded as a right that belongs to the teacher rather than to the pupil. The fact is, however, that academic freedom is the right of each pupil to have free access to sources of information. It is closely related to freedom of the press and freedom of speech. In this sense, protecting academic freedom is certainly an important professional responsibility.

What academic freedom does not refer to is the teacher's right

to use the classroom as a sounding board for biased views, half-truths, and prejudices. The teacher's influence over the child can be beneficial—but it can be harmful and destructive too. Free access to information is basic to an enlightened citizenry capable of carrying on the life of a democracy. But attempts to influence children to accept the personal attitudes of teachers cannot lead to independence of thought and action.

After all, the individual teacher does not set up the goals of the school single-handed. Goals are established by the school as a whole, proceeding under the guidance of the community that supports it. As a professional teacher, you are under an obligation to accept the goals that the community holds important, and to do everything in your power to help children attain them.

Your special advantages as a teacher

YOU MAY BE thinking by this time that the teacher's life is nothing but a series of professional and personal problems. But it has many advantages too. In many ways, teaching is one of the most rewarding of all professions. The National Educational Association has listed several of the rewards of teaching that promote the mental health and well-being of the teacher.² Let's see how they satisfy your needs for security, self-esteem, the esteem of others, and new experiences.

Teaching is socially useful work. The contribution that you as a teacher make to the common welfare will be recognized by your family, friends, and acquaintances. The social usefulness of teaching is immediately apparent to the community and to you yourself. As you see the day-to-day and year-to-year progress that children make under your guidance, you will enjoy the rewards of heightened self-esteem and esteem in the eyes of others. Certainly a professionally competent teacher will have every reason to feel that his work is socially useful. He can see day-to-day and year-to-

² Adapted from *The Status of the Teaching Profession*, National Educational Association Research Bulletin, XVIII, No. 2 (1940).

year changes in his human materials that he can credit to his efforts.

Teaching presents challenging problems. New experiences and challenging problems are essential to happiness and to intellectual growth. They open the way to the highest levels of social, intellectual, and emotional maturity. Teaching that is based on the needs of the individual child inevitably brings a wealth of new experiences. No matter how many years you teach, you will always find that the attempt to understand and guide the growing child in a social environment fills every day with new challenges.

Teaching encourages self-analysis. By its very nature, teaching demands that you constantly test your strengths and try to discover your inadequacies. A realistic, accurate appraisal of your own abilities and weaknesses is an important developmental goal. If you can accept this knowledge without feeling threatened, it will lead you to continued improvement and increasing self-respect and confidence. Only through self-knowledge can you set for yourself attainable life goals, which are essential to good mental health.

Teaching stimulates broad interests. The environment in which you will work is rich in social and intellectual stimulation. Your students, even the youngest ones, will be alert, enthusiastic, and questioning. Your fellow teachers will be well educated and will have interests and ideas that will open up whole new areas of intellectual activity to you. You will have time for further study and an atmosphere in which you can put new, proved techniques into actual practice.

Teaching strengthens self-control. The classroom is not a place in which you can indulge in emotional outbursts. Because of your concern for the welfare of the students, you will restrain yourself from giving any indication of fear and anger. And calm outward behavior induces inner calm and composure. The self-discipline that you develop in the classroom will in time become habitual and will be a source of strength in times of crisis. The poise that goes with self-control will take you far in winning the esteem of others.

Teaching is a chance to grow. If you are to attain higher status, increased competence, and better positions, you will be expected to continue your studies and increase your knowledge. You will grow in experience as you attack classroom problems and work with teachers' organizations, community groups, and curricular committees. During the summer months, you will have a chance to attend summer schools and to travel. Or you may take on a summer job—an excellent way to grow in your knowledge of the community. Few other occupations offer such wide opportunities for both personal and professional growth.

Teaching assures pleasant and comfortable working conditions. As a teacher, you will enjoy surroundings that are as clean, well-lighted, and attractive as those in any other occupation. Your work does not call for extreme physical exertion or exposure to the weather. Ordinarily, you will be able to live near your work and return home almost every evening.

Of course, not everyone would regard all these conditions as advantages. Some would be so disrupted and overwhelmed by the problems inherent in teaching that they would be blind to its rewards. But if you are sincerely convinced that the teaching profession is compatible with your interests, personality, emotional needs, and abilities, you will find that its rewards are far too numerous to set down in any list.

Conclusions

AS A TEACHER, you must believe in the dignity of teaching and in the value of professional knowledge and skills. Without such a belief, you will be as out of place in the classroom as an agnostic in the pulpit.

Your personal well-being and your professional success will depend in part on the enjoyment you get from cooperative social relationships with others. You cannot withdraw from people; you must derive genuine satisfaction from your daily life with them—both children and adults.

Fortunately, you have daily opportunities to improve your skill and confidence in social relationships, both now and after you begin to teach. Seek situations in which you can be with others and help them. The more you work with others, the more interested you will become in their welfare.

Learn how to separate your work from your recreation. Overwork may be a symptom of maladjustment, but it is seldom a cause. The basic cause of maladjustment is worry and the consequent nervous tension that persists through all your waking and sleeping hours. If you develop good work habits, a 40-hour week should be time enough for you to carry on your teaching job. To be mentally healthy, you must learn to do the work that needs to be done, rather than worry about when and how you should do it.

At times, you must occupy yourself both physically and mentally with interests other than professional interests. You will need hobbies, sports, art or musical interests, reading, and social activities to fill the time not taken by your work. Inactivity of body and mind, except in sleep, is not recreation. The best recreation is a change in activity and interest. This does not mean that you cannot do additional study during summer months or week ends, or that you cannot build a hobby around your professional specialty. Hobbies related to your main interest are, in fact, often the most rewarding, because you can carry them on skillfully and because they add freshness and variety to your classroom activities.

To be a well-adjusted teacher, you will need well-formulated and attainable professional goals, financial goals, and educational goals. If you know your goals, you can take pleasure in your steady, directed progress toward them. Your daily life in the classroom can be the source of constant stimulation, and your life as a teacher can be an endlessly challenging and rewarding experience.

Problems and projects

1. Describe the type of community and school in which you believe you are most likely to teach. List the satisfactions and problems you are likely to find there. What do you think you might do to overcome these problems and to increase these satisfactions?

2. What do you think were the greatest satisfactions and problems that your elementary-school teachers experienced? High-school teachers? College teachers?

3. Do teachers in the primary grades, elementary school, high school, and college need different personality traits and life goals in order to succeed?

4. What social status and acceptance do the citizens of your community accord teachers? What personality traits among the teachers seem to influence the citizens' attitudes?

5. Discuss how the creation of effective learning situations will satisfy the psychological needs of both teacher and student.

Additional resources

Havighurst, Robert J., *Human Development and Education*. New York: Longmans, Green and Co., 1953. Chapter XVI, "Developmental Tasks of Early Adulthood," pp. 257-267; Chapter XVII, "Developmental Tasks of Middle Age," pp. 268-276. (An interesting discussion of the general problems of adult life.)

Snygg, Donald, and Arthur W. Combs. *Individual Behavior*. New York: Harper and Brothers, 1949. Chapter XI, "The Task of the Teacher," pp. 226-244. (A stimulating summary of the over-all responsibility of the teacher to the child and to himself.)

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